COMMITTEE HEARING

BEFORE THE

CALIFORNIA ENERGY RESOURCES CONSERVATION

AND DEVELOPMENT COMMISSION

In the Matter of:	)	
	)	
NOTICE OF PROPOSED ACTION	)	Docket No.
CCR TITLE 20; SECTIONS 1601-1608	)	06-AAER-1
	)	
Proposed Amendments to Appliance	)	
Efficiency Regulations	)	
_____	)	

CALIFORNIA ENERGY COMMISSION

HEARING ROOM A

1516 NINTH STREET

SACRAMENTO, CALIFORNIA

MONDAY, MARCH 27, 2006

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Reported by:
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Contract No. 150-04-002

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P R O C E E D I N G S

10:06 a.m.

PRESIDING MEMBER PFANNENSTIEL: Good morning. I think we'll begin. This is the Energy Commission's Efficiency Committee public hearing on action to revise the appliance standards. This is a public hearing, and the first of two. The second will be at the time of the April 12th Energy Commission business meeting, which is the last opportunity to affect the changes in these appliance standards.

There are limited changes that we're proposing that we'll be discussing today. And I believe that everybody has the information on what these limited changes will be.

We would like today's hearing to really be very focused on those changes with a preference for any new information, anything that has come in since our January workshop on these items. But this is an opportunity for the public to address the changes that the Energy Commission will be considering on April 12th.

With that I'll do the introductions on the dais, and then I'll ask the staff to make a presentation of the changes.

I'm Commissioner Jackie Pfannenstiel, and I am the Presiding Commissioner of the Commission's Efficiency Committee. To my right is my Advisor, Tim Tutt. To my left is Commissioner Rosenfeld, the other Member of the Efficiency Committee; and to his left is John Wilson, his Advisor.

Commissioner Rosenfeld, do you have any comments?

ASSOCIATE MEMBER ROSENFELD: No, I'm ready to listen to the staff.

PRESIDING MEMBER PFANNENSTIEL: Thank you. Then, Jim, would you begin?

MR. HOLLAND: Thank you, Commissioner Pfannenstiel. Welcome to those who have come to this Efficiency Committee hearing today. I'm Jim Holland of the Commission's appliance program.

I will give an overview of what the proposed amendments to the appliance efficiency regulations, which are the subject of today's hearing, contain.

First of all, the proposed changes included in these amendments only affect standards which have already been adopted. There are no new efficiency standards being proposed. The

regulations that include the standards under discussion were adopted by the Commission in December of 2004.

I will now go over each of the proposed changes which you can follow in a handout made available in the foyer.

First of all, in section 1601(u) Scope, we are adding the exclusion of power supplies that are classified as devices for human use under federal Food, Drug and Cosmetic Act, and require U.S. Food and Drug Administration listing and approval as medical devices. And this, of course, applies to the external power supplies.

Under section 1604(u), test methods for power supplies. We are removing the requirement for the power supplies to be tested at both 230 volt 50 hertz and 115 volt 60 hertz. We're only going to be requiring, if these amendments are approved, the testing and efficiency requirement at 115 volts and 60 hertz.

In section 1605.3(u) energy efficiency standards. First of all for power supplies we're adding the wording to make it clear that the power supplies meet the efficiency requirements only at 115 volts and 60 hertz. We are also changing the

effective date of the standards, the first tier standards, from July 1, 2006 to January 1, 2007. And also changing the second tier standards from January 1, 2008 to July 1, 2008.

In addition, we're delaying the effective date of the digital television adapters from January 1, 2007 to January 1, 2008.

And finally, in section 1607 for marking requirements, we're making it clear that they only need to comply at 115 volts and 60 hertz. And in doing so, we're somewhat amending the international standard marking of Roman numeral to add 115 volt next to it, so it's clear that the Roman numeral III, for Commission purposes, indicate efficiency requirements only at 115 volts versus the standard 230 and 115 volts, as used by EnergyStar.

And that summarizes the changes that are being proposed in the amendments before us today. And that's all I have.

PRESIDING MEMBER PFANNENSTIEL: Thank you, Jim. Now, for further discussion I have a handful of blue cards which we need to work our way through. But I also have the presentation plan that I believe CEA put together. So I think

it would be most efficient if I work down the CEA presentation plan, but making sure that I cover everybody in the subjects listed in the blue cards.

So, with that, if that's acceptable to everybody, we'll begin with Shawn DuBravac from CEA.

(Pause.)

MR. HOLLAND: I'm sorry, I'm having problems getting the computer to come up.

MR. JOHNSON: While they're getting set up there, Doug Johnson with the Consumer Electronics Association. I'd like to thank the Commissioners and staff for the opportunity, once again, to present our presentations on various issues related to external power supplies and digital television adapters.

Shawn DuBravac, our Staff Economist, will be starting off focusing on supply chain and cost issues related to the market for external power supplies as they relate to our industry.

And we have, following that, also several other presentations which hopefully will be up and running by the time we get to that point.

There we go.

MR. HOLLAND: Not quite.

PRESIDING MEMBER PFANNENSTIEL: Doug, I'd just like to make sure that we're going to go through this as efficiently as possible; and I have this presentation plan that I assume you put together.

I'll move down here, but at each area I'm going to see if there are others, since I do have a pile of blue cards. I'm not sure that everybody in these blue cards is on your list.

So we'll be interspersing your presenters with possible other comment.

MR. JOHNSON: That's fine. In fact, if there's somebody else without an audio/visual presentation now might be a great time for that.

MR. HOLLAND: Yeah, that's probably a good idea. If there are comments that people would like to make now, and you need not if you'd rather wait until the CEA presentations have been made and then make your comments that would be fine, also. But if you'd prefer to start now, you certainly are welcome to do that.

MR. CALABRESE: Well, thank you, Madam Chair, I'm David Calabrese with AHAM, the

Association of Home Appliance Manufacturers.

I'm talking about a different subject than CEA, and I don't have a presentation. So I can go through this without it.

As you know, AHAM is a representative of home appliance products, major, portable and floor care products. Our members that manufacture portable and floor care appliance products are involved in the proceeding, the regulation before the CEC and the amendments today, that I'd like to direct my comments to.

I'd like to say first of all that on behalf of the Association we do appreciate and support the delay in the effective date of the EPS standard, as is provided for in the amendments in the materials spoke of a few moments ago. I think that's an important provision that we do support.

However, our industry and Association believes that the Commission should go further. We ask that as you are now currently in the process of creating a new appliance battery charger specification test procedure and regulation, that while you're doing that that you exempt appliance battery chargers from the scope of the EPS standard while you're in the process,

through your consultant, of developing a separate test procedure and a separate standard.

And the reason that we say that is that the current EPS regulation, we believe, is inappropriately applied to appliance products that use battery chargers. And I'll explain a little bit about what we mean by this. And this is consistent with our testimony in the past on this subject.

Essentially appliance battery chargers use energy in a different manner than other products that use an external power supply. And this gets back to the issue of the different modes of energy use for an appliance product that use a battery charger.

As you may know, there are essentially three different modes of energy use: Active mode when the charger, the battery charger, is drawing power to charge the batteries of the product. A standby mode when the product is actually, the end product is disconnected from the battery charger and the battery charger is sitting somewhere and drawing some amounts of energy.

And lastly, the maintenance mode. The maintenance mode is a stage in which the product,

the battery is engaged in a cell equalization process that uses generally minimal amounts of energy.

Appliance battery chargers essentially operate within that maintenance mode. And the EPS regulation, which we're here to talk about today, essentially measures energy in the active and standby mode. However, appliance battery chargers don't operate in the active and standby mode. And so that is the crux of the problem for us in the current EPS regulation.

Just give you a few examples of some of our products and why the current standard is not appropriately applied to them. One of the provisions in the current regulation would provide for standby power, measure -- a restriction of standby power to .5 watts.

Now, give you a couple examples, a couple products, and I have one of my members here from Wahl Clipper who can explain in much more detail and more qualified in this than I am. But, for instance, one of Wahl Clipper shavers essentially never spends any time in standby mode, just from the basic nature of the use of the shaver.

You plug it in; you charge it up. And then when it's charged waiting for the next time you use it, you unplug the cord and you store it somewhere. And they have data from consumers that prove that case. And so measuring and restricting the standby power for a shaver, trimmer, beard trimmer is not really appropriate to that type of product.

Another example would be a cordless vacuum cleaner. Now these would be products where the battery charger does remain plugged in, for instance plugged into the wall; however, when you use a cordless vacuum cleaner, you take it off the wall, you use it for a few moments; and you put it back on the charger.

So the standby period is essentially negligible. In fact, some of our studies have shown that one of these products might spend eight minutes a week in the standby mode.

And so if you actually take that example of a cordless vacuum cleaner and apply the -- and look at what the energy saved would be through this standard, consider again the .5 watts restriction, and essentially a cordless vacuum would use maybe .8 watts in standby mode. The

energy saved, of course, would be rather minimal; and doing a cost/benefit analysis you would have negligible cost savings to the consumer over a very long period of time.

Now, in addition to standby mode the EPS procedure also measures active mode, as I said. This is not, again, the type of energy mode that many of our products would actually spend most of their time in. In fact, the Cadmus Group, which was contracted by EPA when they were creating the EPA test procedure and specification for these products, determined that about 3 to 14 percent of time for appliance battery chargers did they actually spend in the active mode.

And, again, doing a cost/benefit analysis the cost and savings would be negligible. In fact, in some cases they found it would actually have a negative payback.

So, the real issue here is this standby versus active versus maintenance mode. And the maintenance mode is the proper place to measure the energy use from an appliance battery charger. Again, the Cadmus Group found that about two-thirds of the energy used by appliance battery chargers was in this maintenance mode.

In fact, during the workshops that your consultant has been engaged in to develop this new procedure, they are moving in that direction of looking at maintenance mode rather than active and standby mode.

So what we would ask the members of the Committee to consider is exempting appliance battery chargers while you're in the process of developing this separate regulation, this separate test procedure, through the workshop process through the consultants that you're working with. We think that's a reasonable way to approach the issue. It's a reasonable way to address this problem with the current regulation and its inapplicability to appliance battery chargers.

Because if you were not to do that what would end up happening in reality would be for the January 1, 2007 deadline manufacturers would have to switch their products to, of course, adhere to that standard to be in compliance with the law. That, of course, would entail some cost.

And then at some point down the road, maybe a year, maybe two years down the road, make another switch. Change their products again to make sure they adhere to the new specification.

We would ask that we make this more seamless; in fact, exempt them for the time that you would need to develop this separate appliance battery charger test procedure and regulation. We, of course, would commit, as we have, to work with you and to help develop that. And help with the test procedure; help with developing the regulation, itself.

So those are my comments for you, Members of the Committee. I would welcome any questions that you might have.

PRESIDING MEMBER PFANNENSTIEL: Tim.

MR. TUTT: Yes. How would we distinguish a appliance battery charger from say a cellphone battery charger in a regulation?

MR. CALABRESE: Well, the EPA specification for -- the EPA exempted appliance battery chargers from the scope of their test procedure and from their specification. They have a definition for it, which I don't have here with me.

It essentially gets to the way that appliances work. As I recall, the definition was related to the use of heat, light or motion in the appliance product. I'd have to get that and

review it. But we can certainly talk to you more about what's an appropriate way to exempt or to define those products.

But they, in fact, did an exemption for a year. And the way the EPA program worked is they exempted appliance battery chargers for one year with a clear expiration date. And if there was not a subsequent new procedure that the former EPS procedure would then apply to all those products. And within that year we were able to come up with something -- or they were able to come up with something, in cooperation with the industry, that was done within that year's period.

ASSOCIATE MEMBER ROSENFELD: I have a further question on this. The CEA, whatever it's called, anyway, memo to us dated today, talks about the topics you just mentioned, the small uses.

And I find it fairly convincing that hair clippers and what is it, digital camera, camcorders and so on, don't spend much time in standby.

I'm a little surprised at the claim that cordless -- I'm sorry, cellphone chargers don't. At least I, myself, tend to go home and plug the

cellphone charger in before -- plug my cellphone in before I go to bed, and eight hours later I am ready for the next day, which is a third of real time.

I can concede that when we get together to decide what to do that we're sympathetic to some of these uses. How would we distinguish between cellphones and camcorders and so on. This is amplifying Tim's question, I think.

MR. CALABRESE: Well, I can't really speak to the consumer electronics issue, I'd ask them to help you define the difference between camcorders and the other products.

I mean from the appliance standpoint I think there's some distinct uses and functions of appliance products that we could develop a workable definition that would define them and would distinguish those from cellphones and other products which I have no comments on whether they do it or not, how their energy is used.

So, from the appliance standpoint I think there are ways to define them in a way that would be clear. And, in fact, even if there were very -- simple ways of defining appliances by even just naming them. There are various broad

categories of appliances that colloquially are known. Kitchen appliances, personal care products, home comfort appliances that, I think, would even be defined further. But there are certainly ways, I think, we could do that.

Or if there be a need for more specificity, you could get into more of the technical aspects of them.

Does that answer your question?

ASSOCIATE MEMBER ROSENFELD: I guess we could rely on some survey which says something is used less than one-tenth of the real time or whatever. Yeah.

MR. CALABRESE: Creative ways you could do that, yes.

MR. TUTT: You talked about the EPA standard and being defined in terms of heat, light and motion. Where do the heat and light come from? The products you mentioned really are motion products.

MR. CALABRESE: Well, there's irons. I guess that would be the heat. I mean we have a whole, there was a whole list of products that I wish I had in front of me. I can certainly get it. We can look at it.

It's more than just those three words. It's actually provides a great deal of -- actually, I think in addition to that somewhat broader definition, it then describes that would be the following product. And it lists, for example, the way we describe our industry is major, portable and floor care products. The two that we're talking about here are portable and floor care.

I think it then said that portable appliances, which include toasters and blenders and food processors, et cetera, just actually just naming them specifically. There's enough of those that we know exactly which ones would be affected that you could just say it relates to these five products, these ten products.

But, again, if there's an interest we certainly would appreciate the opportunity of coming up with giving you some information on how to do that.

MR. TUTT: Okay, and again, in the case of a toaster or a blender, typically they don't have an external power supply. But there are some examples where they would?

MR. CALABRESE: That was probably a bad

example. But, I mean --

ASSOCIATE MEMBER ROSENFELD: Yeah, I think that's a bad example.

MR. CALABRESE: Yes, -- but for those -- and actually there is a smaller universe of portable appliance products that use the battery chargers. And as we've talked about, cordless vacuums, the shavers, electric toothbrushes. Those are the three big ones right there. And there could be a few others.

But those are the ones that we're thinking and talking about the most.

PRESIDING MEMBER PFANNENSTIEL: Other questions? Thank you very much.

MR. CALABRESE: Thank you.

MR. CALWELL: Commissioner Pfannenstiel?

PRESIDING MEMBER PFANNENSTIEL: Yes.

MR. CALWELL: Would it be appropriate to ask a question here, or should I hold for further presentation?

PRESIDING MEMBER PFANNENSTIEL: If the question is of the speaker then I think this would be appropriate.

MR. CALWELL: Okay. Just two questions, really. The first was I was writing down as you

were saying, and I think I heard you say that Commission consultants were looking at maintenance mode instead of active and standby modes for battery charters, is that correct?

MR. CALABRESE: Yes, that's correct.

MR. CALWELL: Did you go to the test procedure workshop earlier this year on battery chargers?

MR. CALABRESE: I didn't, but AHAM did.

MR. CALWELL: Okay. My consultant colleagues led the workshop and just to clarify for the record, the consultants are looking at maintenance mode in addition to active and standby modes. It wouldn't be correct to say we're looking at maintenance mode instead of active and standby modes.

And the distinction, I think, is one that's been made before the Commission. But just to be clear, the EPA test procedure looked at maintenance mode and standby mode only, did not look at active mode for the heat, light and motion devices.

So the principal difference in the test procedure discussions that are going on right now is to include consideration of active mode.

MR. CALABRESE: As I understand -- maybe my words weren't as precise as they should have been -- that the, yes, there is a consideration of all the modes, but there is a significant weighting of the maintenance mode, as I understand it, in the work that's currently being done.

But, yes, I mean, since there is, even as I've noted, there are a percentage of the time these products do operate in standby and active. Although it's a much smaller portion.

So what we're saying is put the emphasis on maintenance mode and you can weight that in whatever appropriate way. But, yes, you're correct. I didn't mean to say, if I did I was -- I didn't mean to say that it was only maintenance mode that you're currently considering.

MR. CALWELL: Okay. And then the second question was mostly directed back to Tim Tutt. Tim, you were asking about heat, light and motion devices.

We had a similar question because we weren't able to locate cordless devices whose principal job is to provide heat. And the reason which I think is what Commissioner Rosenfeld was commenting on, is that electric resistance devices

use so much energy that it's difficult to store enough in a battery.

And so what we have seen are cordless flashlights and emergency egress products that would fall under the lighting category. But very few of those were tested by EPA's consultants. So really they did focus the vast majority of their testing on the motion devices.

And of the motion devices the place where we struggled and continue to struggle is that there are the residential products that Mr. Calabrese is primarily referring to, and then the commercial ones, which are used by contractors and professionals. And they're sold by the same manufacturers. They look like drills and saws and other types of cordless tools, but they are used every day, charged for oftentimes multiple times per day in order to finish a job on a worksite.

And EPA rules didn't draw any distinction between them, even though they have very different active and maintenance mode uses. So, just wondering if AHAM has any other thoughts on ways to distinguish between residential and commercial tools.

MR. CALABRESE: Well, I should say I

don't represent tool manufacturers. So I really can't comment on how that would be applied to those products.

PTI, the Power Tool Institute, is the appropriate organization to address that.

MR. CALWELL: Okay, yeah. So I think in general for both Commissioners I just wanted to say that where we had advised the Commission in this respect is that there are individual products and individual manufacturers who believe that consumers use their products infrequently. But the standard, as constituted, is covering a broad range of AC/DC and AC/AC power conversion devices, and a cost effectiveness showing has been made for the product category as a whole.

If you subdivide the category far enough you can always find an individual example with low usage for certain customers, just like you could with refrigerators or air conditioners or light fixtures. But if the category, as a whole, shows it's cost effective you've made your determination relative to the law.

PRESIDING MEMBER PFANNENSTIEL: Thank you, Chris. Thank you, Mr. Calabrese.

MR. CALABRESE: Thank you.

PRESIDING MEMBER PFANNENSTIEL: Should we go back to CEA?

MR. JOHNSON: Thank you, Commissioner. Doug Johnson, again, with CEA. Thank you for your indulgence as we got the audiovisual equipment up and running.

I think while we're on the thought of infrequent use, it might make sense, and we appreciate your willingness to follow our presentation plan, but it might make sense to jump to the point of limited use products and a possible exemption there.

So, at this stage let me turn it over to Shawn DuBravac, our Staff Economist.

MR. DuBRAVAC: We'll switch topics, but you can't get rid of me. I appreciate the chance to present to you today, and thankful for some technical help.

So, two weeks ago we surveyed over 1000 consumers to find out how they were using their external power supplies. And what we found may or may not come as a surprise.

As you can see this is the average use time of the actual products. So, cellphones -- and this is in a month -- cellphones, of course,

are significantly more than some of these other products, digital cameras, video players, navigation systems. And we wanted to drill down into that to see how they were then using their external power supply.

And so here we show that the percentage of EPS for that specific product that are not used on a typical day. As you've guessed correctly, cellphones typically tend to be plugged in for about seven or eight hours, a day, the external power supply. So somebody comes home from work; before they go to bed they plug in their cellphone; they plug in the external power supply. And in the morning they unplug their phone, take it with them, unplug the external power supply.

That is not typical of some of these other limited use products like digital cameras and camcorders, portable video players. And so we, as I started to look at kind of what classifies a limited use product it really ends up being a product that has an internal battery. So they're charging it just enough to take on the go.

Portable DVD player that they're using once a month on a road trip. They're charging it just enough before they go on the road trip to

have power during that road trip. A portable gameplayer with an internal battery. They're charging it and they're using it occasionally here and there, turning it off when they're not using it; the internal battery provides them with enough energy to use the product over an extended period of time without charging it.

Whether it's the daily use of the cellphone or some other characteristic that we weren't able to capture in our survey of over 1000 consumers, cellphones tend to be more often charged on a daily basis. So I think it's not unreasonable when you look at excluding products that have an internal battery, to not look at mobile phones in that category, since they do have -- they are often charged on a more regular basis by the consumer. And that the percentage of EPS are more often plugged into the wall.

Are there any questions on some of the limited use data?

ASSOCIATE MEMBER ROSENFELD: Yeah, what you say is all very plausible. Maybe I misread the CEA presentation, but I had the impression before you talked that you wanted cellphones included in this limited use category. Did I just

misread your earlier presentation?

MR. DuBRAVAC: You might have misread, or we might have misspoke in the document. I think that our data clearly bears out that that would not be probably the recommended course to take, since the EPS for mobile phones are plugged in much more frequently than these other products.

As we looked at the characteristics of what is a limited use product, we really found that it was this product with an internal battery. That holds for all products in that space except for mobile phones.

ASSOCIATE MEMBER ROSENFELD: Okay, thank you very much.

PRESIDING MEMBER PFANNENSTIEL: Were you going to continue back to the presentation you were going to give?

MR. DuBRAVAC: Sure. We can continue on to -- the last two months I've spent looking at the market for external power supplies and trying to characterize that market to determine what our manufacturers are seeing and what 12 months does for us, as opposed to solely six months.

As we've already mentioned, mobile phones end up making up a big part of the EPS

marketplace. Darnell Group, which is really the authority in this space, estimates that 52 percent of external power supplies are mobile phones -- used for mobile phones. And we expect that number to increase over time as we see convergence towards the cellphone.

We also see new technologies encroaching on the lower power segment at the EPS. So most of the growth in the EPS market is in the higher powered section. So, laptops, printers, things in that space.

So, some of the roadblocks we were seeing. We did a survey of our manufacturers and of retail partners to get a sense of what they were finding in the EPS market. And some of the roadblocks that were keeping them from quickly getting these products into CEC compliance.

One of the things we found was this idea of asymmetric pricing. That some companies are getting different pricing than others. And a lot of characteristics are driving that. They might have a bigger portfolio of products, so they're spread throughout the voltage ranges. They might also be manufacturing a very small number of that product and so they don't have the economies to

scale of a very large volume.

And so I think this goes a far way in explaining some of the different stories we're seeing of why some companies are finding themselves easily complying, and others are having difficulty doing that.

This other concept that we found in our survey was this idea of asymmetric supply. So companies that produce mostly laptops or printers or find themselves in a very specific voltage range are not having a hard time getting supply. Some of these other manufacturers that have a very big product selection, so they have very many products to bring up to compliance, are having a harder time getting supply. And, again, that goes to the fact that they might not be ordering in the volume. And they're also, more specifically, I think, they're focusing, they have a lot of products in the lower voltage range.

The other difficulty we're finding, the other roadblock is that many of the EPS, especially in the lower voltage range, are failing the tier one compliancy tests. So the manufacturers are going out to their vendors, explaining to them what standards need to be met,

and the EPS are coming back and they're failing those tests.

Additionally, they're failing other tests for safety, UL, FCC. After they get a product that they think looks compliant and they do some additional tests, they're finding it interferes with their products, or that it's failing these other tests.

This is coming, again, from the Darnell Group, is a breakout of what the external power supply market looks like. So, again, mobile phones is a significant chunk. And the consumer electronics part of the external power supply market is relatively small. We're looking at about 15 percent.

I would estimate that somewhere between 7 and 10 percent of that group is really the group that benefits from a 12-month delay.

So we see the mobile phones are tending not to have a problem complying with the CEC regulation. The 20 percent of computers is also not having a problem. So it's this small chunk that's really needing an additional 12 months to bring up --

PRESIDING MEMBER PFANNENSTIEL: I'm

sorry, what was the percentage, do you think, is the group that's having the problem? What part of the 15 percent?

MR. DuBRAVAC: Right. I think it's somewhere between 7 and 10, 7 and 12 percent.

PRESIDING MEMBER PFANNENSTIEL: Thank you.

MR. DuBRAVAC: Another thing that we overcome with a 12-month delay as opposed to solely a six-month delay are some of these short-term externalities that we're seeing in the marketplace. And, again, this goes back to those manufacturers who are having a hard time getting supply; who are producing a large number of products in small volumes.

So these expenses that go beyond just replacing the external power supply. There's packaging, there's labeling. They're having to exert a tremendous amount of engineering effort on this. And a 12-month delay allows them to spread some of that engineering effort across time.

One of the risks that we run in speeding this process up is that manufacturers will substitute actually towards higher voltage EPS so that it does fall into compliance, and then

actually ends up using more power than it needs to.

One of the big risks is that higher costs are going to drive products out of the market. So we see, you know, a $3 markup at retail on a $10 product is going to just drive that product out of the market.

And as less products are in the market then those products that do remain can then charge higher prices. And ultimately, if you're the only product, you can have monopoly power.

This is a quick look at the time involved in going back and getting some of these products retrofitted and getting an EPS that will fit with the product that already have in the marketplace. We'll provide this in detail so you can examine this later.

But, you know, it's taking up to 53 weeks to walk through this. So, even after you've got a product sample and you run tests and it fails and you go back and work through it again. And then you actually get a product that works. You have to -- at each step you're getting at the end of the queue.

You know, you send it to UL test, you

see, and then you're at the end of the queue. Then once you've passed those then you make your order with your vendor, you're at the end of the queue. Which continues to push this process out.

One of the things that a 12-month delay does give to overcome some of these cost issues is deflation. We have significant deflation in this industry. And we have over the last 50 years. And so a 12-month delay really allows manufacturers to gain economies to scale, and it allows prices to come down.

This graph shows market concentration for the top consumer electronic retailers. As you can see, the concentration in this market has increased. the Department of Justice and their antitrust group considers anything over 1800 to be a heavily concentrated market.

So you can see that manufacturers cannot pass on higher costs at retail. There is just too much market power at the retail level to pass on costs. So, you know, a $3 increase on a $10 product will not make it to market.

But, again, significant deflation will help these costs. And I think the 12 months goes a very long way in lowering these costs so that

these products can remain in the market.

We've seen already positive impacts from a six-month delay. And I think an additional six months goes much further in allowing manufacturers to comply and to keep these products in the market. Again, this is audio equipment and computers.

Are there any questions?

PRESIDING MEMBER PFANNENSTIEL: Thank you very much. Are there questions? Thank you. Excellent.

The next presenter I have on the list is Dwayne Campbell from RadioShack.

(Pause.)

MR. CAMPBELL: I just want to thank the Commission for allowing us to come and speak on these topics and also for the proposed rulemaking that has been issued.

What -- is basically a presentation we gave to John Wilson during a recent visit about some of the problems we are seeing with bringing power supplies into compliance with the CEC requirements.

An assumption that it's a matter of taking off-the-shelf power supplies and just

dropping them in the products, and the products will be compliant and it will work just fine.

What we're finding is that we're having to go back in and look specifically at products; and also make changes to the power supplies in order that they work properly with the product.

In one example we have a security camera that on the left you see the image from it. It's relatively clear and works just fine. However, when we took an off-the-shelf switching power supply and added it to the product we started getting interference bars in the image, which made it basically unacceptable from a consumer standpoint.

This required us going back and working with the manufacturer, power supply manufacturer, to add additional filtering. This just basically shows what that noise looked like on an EMI chart. Basically the noise was happening between 600 kilohertz and one megahertz. And that's what was causing the actual interference.

The next example, and this is still a problem we're still working with, but simple AM/FM radios, when they're used with a CEC-compliant power supply, switch mode or even a hybrid linear,

we're seeing noise interjected back into the broadcast, and especially in between stations where you get a loud hum, or a loud, kind of a roaring noise. This is coming directly from the power supply. And so the manufacturers have had a hard time trying to find solutions for it.

Another example we have, and these are just problems we've found so far, is that audio products are also struggling with noise being produced by these power supplies -- great deal of filtering inside. In this case what we're hearing is a hum back in the recording or in the playback. And this, of course, is very annoying to the consumer and results in the power supply being returned or the product being returned.

That's all I had. Any questions?

PRESIDING MEMBER PFANNENSTIEL: Thank you, Mr. Campbell. Are there questions? Thanks very much.

Oh, John.

MR. WILSON: Dwayne, I really did appreciate spending the day with you at RadioShack. And this was one of the displays that you showed me.

And I'm not an engineer and so I don't

know what the solution to this is. And I guess I'm hoping that at some point, if not now, the manufacturers would respond to this and say if this is an insurmountable problem or surmountable.

You know, I did talk to some manufacturers after I got back and they seemed to think that this was surmountable.

MR. CAMPBELL: Yes.

MR. WILSON: So I don't know quite where we're at.

MR. CAMPBELL: The first problem we showed back with the video noise coming through, we do have a solution for that one. Tweak the filter in the unit and resolve that.

The noise in the tape player, we've improved that. The biggest problem we're struggling with, and this is one we have not got a simple solution yet for, is noise back in the AM band and FM bands. That seems to be a little more of a challenge because those are in the frequencies that these power supplies tend to operate.

PRESIDING MEMBER PFANNENSTIEL: Excuse me, Mr. Campbell. So the answer is that for the other categories, other than the AM/FM band,

filter will solve the problem, and it's a matter of cost?

MR. CAMPBELL: It's a matter of adjusting the filtering and just working through the problems and making sure it's been solved. And I guess that's one of the reasons why manufacturers are struggling with this. Is it's not taking just the power supply and dropping it in. It is requiring some additional engineering time to go back and make sure the problems are solved. And then once they get those problems solved, actually taking it out and get it tested.

I guess it goes back -- really like you to understand is that understand this is why manufacturers, why CEA is coming to you and asking for time. And why we believe that a minimum of six-month extension is absolutely necessary. And we'd really like to see an extension of a year to allow us to do this and do it effectively.

PRESIDING MEMBER PFANNENSTIEL: Thank you. Other questions? Thanks very much.

MR. CAMPBELL: Thank you.

PRESIDING MEMBER PFANNENSTIEL: Next we have Ernie Morales of the Harman Music Group.

MR. MORALES: Good morning, everyone.

My name is Ernie Morales; I'm the Compliance Engineering Manager of Harman Music Group out of Salt Lake City.

Harman Music Group is a subsidiary of Harman International, which is obviously also here in the State of California through the brand names of JBL, Infinity and others. We, in Salt Lake City, have several brand names, ourselves; DOD, Digitech, DBX, BSS and so forth.

Our main situation here is the Digitech brand, which tends to use most of these EPS power adapters.

In continuing here I would like to take a minute to thank the Commission for all the work that you've done thus far and in allotting me the time to speak to you on how all of this affects our particular products.

Dwayne was just putting up those slides up there, and he says, yes, there is a surmountable solution. That would be true. That would be to state in simple terms that, okay, let's pop a filter into this particular EPS and it will work with that particular product.

Popping that same filter into the EPS will not guarantee that that EPS will work with

the product sitting next to it on the shelf, right next to that same product.

In other words, the EPS and the filtering techniques affect each other as how they interact with each other on the products. And where you may solve it in one, that simple solution may not have solved it in the other.

Another thing that we find in a lot of these situations is that we look at, okay, we found the solution by adding a filter capacitor. But now we have to go take that particular product back to UL, to CSA. You have to go back and test everything again. All of this adds an extreme amount of cost to getting the product back out to market.

Now, keep in mind, in this particular case Dwayne, the solution was change the EPS to make it work with the product. In a lot of cases that will not happen. You will change the EPS and you can add a lot of filtering to the EPS and you might almost get it there. But in cases where you have a lot of audio gain, for example, that little bit that bleeds through is going to be picked up by the product, itself. And it, itself, will then be amplified and you're not going to get rid of it

that easy. You got to go back into the product and change the product, itself.

So, having said that, I'll continue with where I was actually going to start, and that's to say that I submitted a letter March 16th whereby we voiced several concerns, a lot these in these same particular areas, of things that we at Harman Music Group do not, at this present time, have any solution to.

And I do not believe that industry, as a whole, in the music industry where we're at, has a solution. It doesn't exist at this point in time. Allow me to elaborate on that.

Our product that we use most of our EPSs with is stomp boxes or distortion pedals, as they're known. They're used in many cases by guitarists. They'll get them up on stage and they'll be doing their little thing, and as they're doing that they're actually stepping on a pedal on the floor which creates the distortion and all the crazy sounds.

They call it music; I call it noise; we'll leave it at that. In any case, these stomp boxes, they work with EPSs. In our particular case we've had this particular design. And not

only us, but several of our competitors use this particular design where they use operational amplifiers.

Operational amplifiers work best and optimally when you have a positive and a negative braille. In order to have this positive and negative braille, you pretty much have to have an AC-to-AC supply.

We take the AC-to-AC supply; we split that up into the positive half and the negative half, and we feed our product with that.

In doing this we find that we are able to use the AC supplies to help prevent a lot of noise issues. A lot of noise, not only from the audio standpoint of view, but a lot of noise from the EMI standpoint of view, the electromagnetic interference point of view. So, this is really one of the main reasons why we use linear power supplies of the AC-to-AC type.

Continuing on, we also find that obviously a linear supply is much less costly than, say, a switch mode type supply. I do have, inhouse, a DC supply that is a linear type, and it's switchmode equivalent. We have the switchmode equivalent at two and a half times the

cost of the linear.

If I were to take a $70 pedal, add the switchmode in place to the linear supply, that $70 pedal will, at retail easy, go for somewhere in the neighborhood of $85. That could pretty much put a little pedal out of the marketplace.

The marketplace is very price point driven. If you can't hit those price points, people are simply not going to buy the product. By adding cost to the product we are essentially killing it.

So, we say okay, let's take this switchmode and put it in and let's get it out in the market. Well, we have already established that it's going to be substantially more expensive at the retail site. But is it technically possible to just take a switchmode supply and drop it in? It is not. It is simply not technically possible.

To begin with, we need an AC voltage due to the way all our circuitry is already designed. It has been designed like this for many years. It is designed into somewhere between 50 to 75 different products. And there is no way that we can just simply take a switchmode and drop it in

without all the problems, some of them which were just brought up earlier.

So, then, what would it take from our end to go to that switchmode, assuming we could find this switchmode, what would it take to go to that switchmode. We would have to add additional circuitry to our products; not to the adapter, itself, but to our products internally in order to convert the DC voltage from the switchmode adapter back to an AC voltage to work with our circuitry.

This additional circuitry such as inverters and their supporting equipment or components to help support the additional circuitry, they, themselves, are going to now require more energy. Are these inverters that we're now going to have to add going to negate all the energy savings? Is it going to negate some of the energy savings? I'm not sure.

But I can tell you that we will be using more energy during normal use, because we're adding what, to us, is unnecessary circuitry. It's circuitry that will allow us to convert from a DC back to an AC, which we already had to begin with in our linear supply.

So the redesign to accommodate just the

simple circuitry, in many cases, will actually physically grow our circuit board. The circuit board, which is where all the components are placed on, it will literally grow it to a larger size to accommodate additional components.

The additional growth will have to accommodate the growth of the chassis, which is obviously the covering, whether it be metal, whether it be plastic, small, large; it's going to have to be grown in order to accommodate the additional components.

In accommodating a larger chassis now you are also asking us to turn around and change the size of our packaging box. Because obviously we have to grow our chassis, so now we have to grow our packaging box.

In growing our packaging box now we also have to grow our shipping box, because obviously the larger packaging box is going to take more space, so everything has to be grown in order to accommodate.

Now, in looking at that we almost can see, well, one step leads to the other, leads to the other, leads to the other. What we want to also take into consideration here is we say, well,

we're going to grow the box, or we're going to grow the chassis or we're going to grow the board, it takes hours and hours and hours from design teams to be able to not only create all the necessary documents, get them all put together, get them sent out for quote, brought back in, only to find out that, oops, somebody forgot something whether on their end or ours.

Here we go again, guys; let's try and get it right this time. And we go around in circles trying to go in every single step, trying to get things done and to the point of being usable.

Not only do we have to take into consideration boxes, simple boxes and all the energy that it would take to get them to change, but we also have to take things like casting molds. We have purchased casting molds that are worth tens of thousands of dollars for each one of these products.

These molds are literally what they make the bodies of our products with. They pour them and they send us the actual casts. Well, if we have to change the size of the circuit board which changes the size of the product, our molds are now

no good, either.

So now we take tens of thousands of dollars of casted molds, throw them out the window; turn around and start redesigning molds. And, of course, the costs involved in getting that done.

Then, as we also talked, there's the problem of the electromagnetic interference. I guarantee that there is no switchmode power supply that any manufacturer can bring to me right now and I can put into all of my products that will just drop and work. It will cause electromagnetic interference. Okay.

We've got two choices. He can try and work it on his end, or I can try and work it on mine. Meaning he works it in the external power supply, or I try and solve for it in our product, itself.

In most cases we find that we're trying to do it in tandem, but in most cases we don't get there, which is why we stay away from them.

Is it do-able? Yes. But, again, we're talking hundreds of hours of back and forth, of testing, of checking, retesting and so forth. It is not just drop it in and it works. That's on

the EMI side of things.

We also have to take into consideration that they're inherently great at injecting noise into the audio path. They will inject noise, pops, scanning noise, motorboat noise, and if you're an audio aficionado, you know very well that the last thing you want in an audio path is any kind of noise.

Just look at any guitar magazine, any guitar magazine has critiques of products. And all of the critics want a perfect audio path. What does it take to get that? Well, an external switchmode type power supply does not help. That's for sure.

Now, up to this point I mentioned some of the issues that it takes, or some of the problems that are created by trying to switch over to the switchmode power supply. So, let's say we bite the bullet and we expand the chassis and the boxes and everything.

We now need to take into consideration the logistics of getting that done. If it was even remotely possible to get it done we still have to take into consideration purchasing departments, document control departments,

document control specialists that design the documents, themselves. We have to take into consideration document preparation, quality control departments. We have to take into consideration our overseas partners and making sure that they get it right and we get it right, things of that nature.

We have to check and recheck. And then after we check twice, we check a third time. And we will eventually now have something in our hands that we say, oh, okay, that looks good; that's going to work. And we have half a dozen prototypes, maybe a dozen prototypes laying around engineering cubicles.

Up to this point we do not have anything in the supply chain. We have just taken all of this time just to re-invent the wheel, to redesign everything, but we have nothing in the supply chain that says, okay, we've got chassis, we can start building tomorrow.

Now we have to go back to everybody that supplies components and say, okay, how long is it going to be before you guys to get us components. In most cases to simply make the components they're going to be talking somewhere, depending

on the component, obviously, in the neighborhood of a month to say three months to get them in line in their manufacturing processes.

So all of this time and energy and effort is just astronomical. I don't see that the Commission cannot agree of the amount of energy and time and money spent to get something like this done.

And up to now it's great. However, I don't have a switchmode power supply that I can just drop in without all of this massive amount of change.

So my other option is, okay, let's go buy an AC-to-AC switchmode supply that does not exist. It simply does not exist. Switchmode supplies put out DC voltage. The DC voltage does not work for us. We need AC. In order to have the AC, we need to, of course, make that particular change. So, that doesn't work.

And lastly, the requirements of the safety agencies. We have different safety standards. The audio industry is, like stated in my letter says, or is the standard for 60065 which is a standard for audio. If you look at any switchmode power adapter in this room, I will bet

you ten-to-one that it is certified to 60950, which is the standard for IT equipment, information technology.

We went through and we had our own AC-to-AC adapters specifically tested and certified to the audio standard. These are linear type, but at the time that's what was working, that's what we did.

So, there is more involved than just to say, okay, let's just drop an adapter in. If we could do that, and it would be economically feasible, I wouldn't be here. In our case it's not at all feasible. We need the AC-to-AC, and we need for it to be linear. That does not simply exist on the market.

So, if we were to go to the switch mode adapter, it would probably take us a couple of years to get all our products up to snuff. I'm talking about existing products. But while we're doing that we're going to spending a good two years without designing new products.

Companies from overseas that we compete for on an international level that may not be shipping product to the U.S. and to California, they're going to continue to build and design new

products. And as they build and design new products they get the upper hand on the best of what's out there.

So you're asking us to basically stop designing in order that somebody else can continue because they're not shipping to the market. This would give them an extremely very high upper hand against products of U.S. manufacturers; against products that come out of here that say made in the USA.

And that can put a big dent in at least our business. It will put a major dent in our business. And it's going to put a dent in other businesses which are our direct competitors; some of them which are from here locally in the State of California. They have the similar AC-to-AC linear supplies. They have the similar operational sections. And they will also be put in a similar scenario as we are.

In closing, Harman Music Group and the audio industry would respectfully request that the CEC reconsider some of the areas in which they are at. To us the optimum would be for the CEC to reconsider reverting everything to a form of a voluntary basis, like the EnergyStar program has

been.

But if that is not possible, we would at least request that the CEC consider exceptions for certain conditions such as these products where there is no alternative on the market. There is no alternative in the pipeline. There are no alternatives in designs from the EPS manufacturers, themselves, for this.

If not -- well, not if not, but we would also ask that the CEC consider those items that are of limited use. In our products, for example, they get used basically during a practice session and/or a performance.

And we know that the EPS is not plugged in or left plugged in because everybody carries gig bags with them. The carry the bags where they throw in the patch cords from the guitar and their external power supply and so forth, because it only takes one time for them to arrive at an important gig without their external power supply and they quickly remember, oh, unplug it, throw it in the bag, so I'm ready for the next gig or the next practice. They're not left plugged in; only used on a very limited basis.

PRESIDING MEMBER PFANNENSTIEL: Thank

you very much, Mr. Morales. Are there questions here? Tim.

MR. TUTT: Thank you, Mr. Morales. First, with respect to the interference or distortion that might come from switching to these new power supplies, would it be safe to say that some musicians would actually take advantage of that in their music?

(Laughter.)

MR. MORALES: If they could control it, yes. But they cannot.

MR. TUTT: Much of the amplifiers and equipment that musicians use is at line voltage, is that not right?

MR. MORALES: I'm sorry?

MR. TUTT: It's at line voltage, it doesn't have an external power supply. They just plug it into 115 or whatever's there?

MR. MORALES: Yes and no. The amplifiers, themselves, yes. They would be at line voltage. However, the pedals, for example like what we produce, they are at basically 9 volts, 9 to 12 volts.

MR. TUTT: I see. And the AC-to-AC power supply, our standards as proposed don't

require moving specifically to a switchmode power supply, just an efficiency standard. So with an AC-to-AC linear power supply there's nothing in the works that would allow an AC-to-AC power supply to meet the efficiency standard?

It seems like a pretty simple transformer kind of thing.

MR. MORALES: For as much as I'd like to say yes, no, sir. I have looked on the EnergyStar website, matter of fact, at, I want to say some 10 to 12 different manufacturers, and I have yet to find an AC/AC efficient supply. It does not exist.

ASSOCIATE MEMBER ROSENFELD: Mr. Morales, I'm puzzled by this, too. When you say an AC-to-AC power supply, what -- it plugs into 115 volts and what comes out? What's the AC output?

MR. MORALES: The AC output is in the neighborhood of 9, 9.6 volts, AC.

ASSOCIATE MEMBER ROSENFELD: I mean that sounds like a transformer to me.

MR. MORALES: That's exactly what it is, sir. It's --

ASSOCIATE MEMBER ROSENFELD: Sounds like

there must be thousands on the market, transformers.

MR. MORALES: All things considered, it is a spec -- transformer, yes.

ASSOCIATE MEMBER ROSENFELD: Tim, can you explain this to me?

MR. TUTT: No, I can't.

ASSOCIATE MEMBER ROSENFELD: Please, Chris, I'm thoroughly confused.

MR. CALWELL: This issue has come up before, and I appreciated Mr. Morales' comments. I would tend to agree with him in the notion that switchmode power supply is not the best solution for him.

But on the AC/AC side, there are three design changes that are normally made to improve efficiency in a transformer. You either change the gauge of the wire, you change the copper content or you upgrade the magnetic.

And so this has been a point of confusion in the industry. In fact, there was even a trade piece that ran recently where the author assumed that the standard was going to require switchmode power supply.

And it's not true. It's just that very

few manufacturers specialize in making more efficient AC/AC transformers. So perhaps we could do some more work to help identify those manufacturers and identify these design solutions that would help them without a packaging change, without a molding or a casing change, and just focusing on minor upgrades to the efficiency of the magnetic.

PRESIDING MEMBER PFANNENSTIEL: So, Chris, you're saying that they're, in fact, are AC-to-AC power supplies available. Mr. Morales hasn't found any. So perhaps we need to exchange that information.

MR. CALWELL: Yeah, I think it's fair to say that the market is dominated by AC/DC designs; so the AC/ACs are harder to find, for sure. And only a small number of companies have asked for more efficient ones. You know, the market is very price-focused.

And so when we've talked to component suppliers they say that, yes, they can put in higher copper content and finer windings and better magnetics, but they have to get asked by their customers to make those changes before they'll offer them.

ASSOCIATE MEMBER ROSENFELD: Now, Chris, to make a bad joke, or Mr. Morales, it sounds to me like these are economies that came in in the last 20 years, and the reason you can't find them is you have to go back to 1960 technology.

MR. MORALES: That's pretty much what it amounts to, sir.

If I may comment on the gentleman's information about the magnetics. Yes, it is a true statement that there is a possibility of gaining more efficiency by changing magnetics, by changing the diameter of the wire. However, I do not yet have or have seen an actual AC-to-AC supply with improved magnetics, with improved wire, that is capable of meeting the CEC regulations.

MR. CALWELL: I'd be happy to furnish data on that. We actually tested a number of units, over 2003, '4 and '5, and one of the consistent phenomena we found, as I think Commissioner Rosenfeld can appreciate, is that when you find AC/AC and AC/DC power supplies with identical power output, voltage and current, the AC/AC units will often be more efficient because they don't have the losses associated with

rectification.

And so we found a number of units that complied and have a chart that we've entered into the record previously.

MR. MORALES: I would appreciate that information, sir.

MR. CALWELL: Sure. And just so I understand, because this could help you, what does the AC input power get used for? In other words, why don't these devices operate on DC whereas other devices often would?

MR. MORALES: Actually, believe it or not we actually take the AC/AC, turn around and rectify it to DC. However, when we rectify it to DC, because we started from both sides of the sine wave, it allows us to give it the positive and negative side for the operational amplifiers. Working them optimally.

MR. CALWELL: Okay, yeah. So, John Wilson, this might be good to put Mr. Morales in touch with some of the other component suppliers who focus on efficient designs. I'm not a circuit engineer, but I think they may have suggestions there that could be helpful, as well.

MR. MORALES: In continuation with this

same subject, we also have to take into consideration that these suppliers do not have the audio standard certification. I can guarantee that they are certified to 60950. We require certification to 60065. At which point, if I go and tell them, okay, I'm willing to look into your adapters, but it has to meet these requirements. As I've seen many others, they're going to turn around and say, sorry, we can't do that. I've gone through it time and time again.

MR. TUTT: Mr. Morales, could you, in simple terms, explain the difference between those standards?

MR. MORALES: In simple terms, wow. Explain the standard in simple terms.

(Laughter.)

MR. TUTT: They're safety standards, is that correct?

MR. MORALES: Both of them are safety standards. There is one standard that was designed or created to control information technology. That is when your computers were first started coming out, your printers, things of that nature.

Those standards, because of where and

how the equipment is used, will limit, for example, the amount of touch current that a person can feel as you're touching the equipment, itself.

Everybody says that all the equipment is at zero; that is not true. There's very little equipment that is at zero.

All equipment will, for most intents and purposes, give you a shock. However, in all cases, or in most cases, you won't feel it.

The standards can have that as a very simple differential. In the case of IT equipment, which was originally more of the business sector, they would allow a higher leakage current, as it's called.

In the audio industry we're limited to less leakage current. That's one area that is always in contention.

Another contention is the spacing, the spacing between the components, themselves, within the design. Especially when you're talking about mains voltages, there are certain spaces that are required. Now, I'm not here to tell you why one standard went one way, and the other standard went the other. But I can tell you that UL 600065 for audio has a tighter tolerance. Meaning you have

to have actual larger spaces to keep things from arcing over.

So, that's tighter than the IT components. I don't know if I'm answering your question.

MR. TUTT: You are, thank you.

PRESIDING MEMBER PFANNENSTIEL: Thank you very much, Mr. Morales.

I think that was all the questions we have. So we'll move on to the next speaker, who I have Mark Sharp from Panasonic.

MR. SHARP: While Doug's queuing up my presentation, which will be brief, I'd just like to thank Commissioner Pfannenstiel and Commissioner Rosenfeld, CEC Staff for giving our industry the opportunity today. We've very appreciative that you are considering amendments to the EPS and DTA regulations.

And what I want to focus on in my brief discussion is why a 12-month delay for the EPS effective date is appropriate.

So far we've talked about some of the supply issues as well as the technical and safety issues related to why we need 12 months. In addition, I'd like to talk about the product

development introduction cycle and why that has a bearing on the time implementation.

Industry's intention, as I hope is clear to you, is to work cooperatively to develop an optimal implementation of the regulation. We're not trying to do away with the EPS regulation, we're trying to figure out an implementation schedule that works best for all parties.

And when I talk about all parties, we want to make it less disruptive to industry and our typical development and marketing cycles, as well as minimize the cost to consumers in California, and to accelerate the payback period of the energy savings realized.

Now there's a number of key factors that define the marketplace that I think bear a little bit of discussion here today. The CE industry, as the name denotes, is consumer sales driven and a retail industry. There are a number of key events where products are sold during the course of the year, and they're outlined here on this graphic.

You have, as you would expect, a holiday buying period; the after-Christmas sales; superbowl; wedding/graduation gifts; back-to-school; and year-end closeouts. And a vast

majority of our sales take place during those periods of time.

And a the same time we essentially, as an industry, follow once-a-year model change schedule. And many companies operate on a fiscal year of April 1st through March 31st. Our major national retailers require us, as their suppliers, that we provide them pricing and delivery commitments typically nine months in advance. And we commit, generally speaking, in the October/ November timeframe to deliver new models for introduction in June/July. And that's very common throughout our industry.

This graphic, which probably looks like a bunch of balloons, essentially is a development cycle put on a timeline over a three-year period. And in case you're not aware, the CES is our annual international trade show, the consumer electronics show, and that's where new products and prototypes are unveiled.

And we go from there into a very extensive product planning process, an engineering and design process where the R&D is done for new products, the specifications are finalized, and the components decided upon for those products.

And then we go from there into the second year where you see the procurement process; the pilot runs at the factory level; the shipping and distribution. And all of a sudden, overlaid on that, you see the greenish type bubbles where the product sales periods and how that overlaps.

And if you go to the next slide, we lay this all out on a single timeline over the three-year period and you see how it all fits together.

And any deviation from this timeline, as you see it, creates major disruption with our ability to get the new products onto the marketplace the consumers demand.

This is a more simple graphic that depicts the typical retail sales cycle for the CE products. You see the peak sales period over the course of the winter and into the spring. And as we transition in late spring into the new model introduction period.

And if you look at the next graphic, what I did is I overlaid the proposal for the six-month delay for the EPS and you'll see it falls directly in the middle of our peak sales period, which again is very disruptive for us. And disruption essentially results in increased costs

to manufacturers, to consumers ultimately, and will, we think, have an impact on the energy savings that could be realized by consumers.

So, in closing, when we suggest a July 1st regulatory date, as opposed to a January 1st that you have proposed so far at this point in time, this is more in alignment with the once-a-year start of our cycle for product development. And it's near the end of our product-introduction season, which again is very critical for us.

It's essentially a very natural transition date for new model introductions, and gives us more time obviously to transition to a compliance with the regulation. It also gives our retailers more time to train their staff.

And essentially this is very critical for us, to have an orderly, smooth transition; and therefore the July 1st timeframe for implementation, we feel, is optimal from our perspective.

Thank you very much.

PRESIDING MEMBER PFANNENSTIEL: Thank you, Mr. Sharp. You realize, of course, that we started with a July 1st timeframe?

MR. SHARP: Yes.

PRESIDING MEMBER PFANNENSTIEL: In fact, right now it still is at July 1st.

MR. SHARP: Right, although that was a different year --

PRESIDING MEMBER PFANNENSTIEL: That turned out not to be optimum.

MR. SHARP: -- July 1, of course; but, yes, I understand that.

PRESIDING MEMBER PFANNENSTIEL: But this process started some years ago, and I think at that time we were assuming that the July 1st of '06 would be appropriate.

MR. SHARP: I understand. I would say that the July 1st is consistent with our original request of a one-year delay, it would have just taken it to the following July 1st. And what you have proposed obviously takes us to the January date. Yes.

PRESIDING MEMBER PFANNENSTIEL: The other question I have is just to make sure you understand that the standard applies to goods manufactured for sale in California. It is not the sales, itself. The effective date of the appliance has to do with the manufacture date of those products.

MR. SHARP: Right. On the surface, when you talk about manufacture date, that sounds like that gives manufacturers a window of additional time. In reality, with our inventories as we try to get them down to the very minimum, it really doesn't provide us with as much additional time as you might imagine. But I understand the point.

PRESIDING MEMBER PFANNENSTIEL: Thank you. Are there other questions? Thank you, Mr. Sharp.

MR. SHARP: Okay, thank you.

PRESIDING MEMBER PFANNENSTIEL: Next we have John Derr from TIA.

MR. DERR: Thank you. It's a privilege to be here today. On a personal note, one of the things that I've always felt very strongly about is I've always been proud to say that I'm a native Californian. So despite having lived the last 20 years back in Washington, D.C., I was raised in the San Fernando Valley. And know from keeping up with family and friends just how critical the topic of energy efficiency is to the State of California.

This presentation will be very short. And references TIA's letter to the CEC dated March

10th. TIA is located in Arlington, Virginia, in the same building as CEA, who we have worked closely with on many issues over the years. And appreciate being here together with CEA.

TIA represents 600 member companies in the information and communications technology industries. And our three main charges are in standards development, policy advocacy and trade shows and facilitating member business opportunities.

With regard to the specific concerns about the March 10th letter, that was developed through extensive industry consultation with our engineering committee TR-41, who has extensive expertise in the engineering of wireline telephony products, and also the user premises equipment division.

The letter was signed by Fred Lucas, who is the Chair of the user premises equipment division. And the information in this part of the presentation basically is work-for-word out of the letter.

Essentially the technology that would be required to make an external power supply compliant with CEC's new regulations, while also

being simultaneously capable of providing acceptable protection from damage from power line surges, is presently still under development.

And as my colleague, Mr. Morales from the Harman, indicated, there's not just a concern with the existence of the power supplies, but there's also a re-engineering effort that is required to be sure that the power supply, once developed, works in concert with the product.

So we believe that safety would be sacrificed if the industry rushed to meet the CEC rules without a reasonable engineering and performance analysis which, as we've heard earlier, does take a number of months.

As noted before, the wireline manufacturing community has only limited experience with the newly developed power supply, you know, presently in a stage of development that could meet the guidelines and withstand power surges.

This is a critical item because over the years, presently, you know, the linear power supplies that are widely used, there was a period of time where there were a lot of returns from products connected to those power supplies because

there wasn't in place the degree of protection that exists today.

So in areas of the country where there are a lot of thunderstorms in the summertime there would be a lot of product failures. So it's critical, as we address the energy efficiency issue, again that it be done in a way to insure that the product engineering matches the power supply engineering, as well.

We also believe that the distribution pipeline would take an additional year to insure timely deliveries in adequate quantities of an approved external power supply for wireline products.

And one of the issues there is that, even though we're looking here at the State of California in terms of how products are manufactured and distributed, it's often hard to make multiple product lines for different states. It's not really practical through the distribution process to just insure that a particular subset of your overall product line is compliant that goes to California. A lot of times it'll go into distribution channels that will serve many states.

So, we're looking at not just fulfilling

California's needs, but, you know, essentially all of North America.

So as noted in the March 10th letter, our proposal is the CEC should modify the effective date for compliance of the power supplies used in wireline products to July 1st of 2008. And this view is shared by all leading manufacturers of wireline telephones represented by TIA.

So I will be glad to address any questions about the TIA process. But to complete the TIA presentation, if appropriate, I'd like to defer to my colleague, Steve Whitesell from VTech, who's chair of our engineering committee TR-41.

PRESIDING MEMBER PFANNENSTIEL: I just want to be clear, then, TIA is proposing a further extension of 18 months to July 1, 2008?

MR. DERR: Yes, that is correct, and the reason for that is just the need to have the power supply in production quantities and also for the product engineering to be complete so that there's a good product in place for consumers.

PRESIDING MEMBER PFANNENSTIEL: Thank you. Then Mr. Whitesell.

MR. WHITESELL: Thank you, Commissioner

Pfannenstiel and Commissioner Rosenfeld and your staff, I appreciate being here to follow on with some of the points that John made.

First thing I want to make clear, and I know that Mr. Haynes made the point at the January workshop, but I want to be sure that we're clear and we're talking wireline telephone products, not just cordless telephones.

A wireline telephone product is something that has an external AC power adapter and also has a line cord, telephone line cord, that plugs into the wall. So it doesn't matter whether the handset communicates to the base by RF link, as a cordless telephone, a cord like that telephone sitting on the desk there, or doesn't even have a handset, like a stand-alone answering machine. All of these products have the same issue.

At the January 30th workshop CEA correctly reported that about 4.4 million cordless telephones were sold in California last year and each of those had an external power supply. When you add these other categories of products to the mix, then the number becomes more like 6.7 million total for the State of California.

Now, the issue is the telephone manufacturers cannot make separate versions of their product unique for California; trying to do so would be a real logistics nightmare. In our own company we have probably 30, 40 different product lines using, I'm guessing, 10 to 15 different power adapters. And to try to duplicate all of those would be a real logistics nightmare.

In addition, we don't control where the products get shipped. We sell to major retailers, Walmart, BestBuy, whomever, and ship to their distribution warehouses. Some of those may be state distribution warehouses, but more generally they are regional or even national warehouses. And then they control where the products that we provide to them get shipped.

So, the next slide then, the point is that all of the products that we make for the U.S. marketplace need to comply with the California regulations. And that means 57 million; not a mere 6.7 million for California, but 57 million need to comply with these regulations.

And once the work has been done, and as pointed out that there are issues related to -- unique issues related to telephones, wireline

telephones, that need to be addressed. And the additional 18-month period being asked for is the same two-year period that was being asked for at the January meeting.

So this is not new with respect to wireline telephones. But that we need the time for somebody to come up with a design that will meet the CEC requirements, and also withstand the powerline surges induced by lightning and so on.

Once that design is done, then we've got to fill the pipeline, the supply pipeline in order to be able to provide these products. So that's the basis of -- gist of my presentation.

PRESIDING MEMBER PFANNENSTIEL: Mr. Whitesell, do any of the other states have regulations such as we're imposing -- we are proposing for your products?

MR. WHITESELL: Yes. Well, there are several states that are outlined in the CEC letter that have on the books regulations going into effect around the first part of 2008, for the most part, that will require -- they're based basically on the California regulations, and very similar.

PRESIDING MEMBER PFANNENSTIEL: Are any of them in effect as late as July 1, 2008?

MR. WHITESELL: I don't know. I do know that we are, California being the first, we, as an industry, both TIA and CEA, are addressing the issue here first. It is our intent to then go forward to these other states and address the issue there.

The issue is availability of products that will comply in the timeline it takes to fill the chain. And whatever a state regulation may be needs to take that into account.

PRESIDING MEMBER PFANNENSTIEL: Thank you. Other questions? Thank you, Mr. Whitesell.

MR. WHITESELL: Thank you.

ASSOCIATE MEMBER ROSENFELD: Yeah, I guess I have a question, except that I'm one speaker behind. It's really for Mr. Derr. It's on this topic, but, Mr. Derr, you said that all manufacturers support this delay.

But I had the impression that there are some supplies on the market, for example by Panasonic, which do the job. Is it really true that all manufacturers support this?

MR. DERR: I must apologize. I believe there was an error in my PowerPoint. It should have said most leading manufacturers --

ASSOCIATE MEMBER ROSENFELD: Yeah.

MR. DERR: -- as was noted in the March 10th letter. So, I appreciate your bringing that to my attention, and I apologize for that.

ASSOCIATE MEMBER ROSENFELD: I mean this is obviously a worn out point, but we are sitting here trying not to betray the manufacturers who have put money and time and successful engineering into external power supplies which will work. And so we're between a rock and a hard place here. But you know that.

PRESIDING MEMBER PFANNENSTIEL: Thank you. Next I understand that Doug Johnson wants to talk about the spare parts exemption.

MR. JOHNSON: Yeah, I'll speak from here if that's okay. In an earlier rulemaking the Commission amended its regulations to allow a three-year period beyond the effective dates of external power supply regulation, during which a manufacturer could continue to make such parts available.

However, this three-year extension is insufficient to meet California's own regulatory requirement that manufacturers provide spare parts for up to seven years.

The regulation, itself, is cited here in this next slide, but it's California Civil Code section 1793.03. But essentially that's a requirement for spare parts to be retained for a period of seven years for products whose value is $100 or greater.

In light of this conflict of law between the CEC's existing regulation and this California Civil Code section, CEA urges the Commission to amend its regulations so that a full seven-year parts exemption would be granted so that manufacturers could meet their obligations under California law.

In addition, since the volume of requests for spare parts in our industry drops dramatically after four years, or between the Commission's current end-point and the seven-year period, it is rather costly for manufacturers to supply spare parts during that four-year window.

So we ask in the absence of such an exemption for spare parts, the manufacturers would be allowed to have that three-year exemption, especially for products for which there's little demand for spare parts, but great cost in meeting California's regulation without that grant, or

without that extension.

Finally, as you know, CEA is a high-tech trade association representing 2000 companies in our industry. Some of these companies manufacture products related to public safety communications.

Most public safety communications products have a very long life for which compatible replacement parts need to continue to be supported. Otherwise, these products could not continue to be used, which would, of course, incur costs for the public safety community.

Therefore, a seven-year exemption for spare parts is very meaningful for this industry segment, as well.

That's my presentation. I'd be happy to answer any questions.

PRESIDING MEMBER PFANNENSTIEL: I think I get back to the issue of that the standards are about the date of manufacture. And I'm just thinking for the additional three years on the spare parts, those spare parts could be manufactured up to the point of the regulations going into effect.

So, your point being that the requests for spare parts fall off dramatically from your

experience by year four, it seems like you could keep an inventory, or the manufacturers could keep an inventory that sounds like a relatively small number of spare parts needed to meet the anticipated requests.

MR. JOHNSON: Well, let me clarify that. For those products that fall off in that period of time, we're talking especially products for which there is a simple, or relatively simple solution as opposed to the more complex issues you've heard earlier today.

The feedback from our members suggests that this is an issue that does need to be resolved. That it's not clear that the obligation seems to be that the industry, on one hand, provides spare parts for up to seven years to meet a certain part of California law; but, on the other hand, there's no exemption granted with the current appliance efficiency regulations.

So, the feedback from our industry is that there is a conflict between these obligations.

PRESIDING MEMBER PFANNENSTIEL: I understand that the dates aren't consistent. But it does not -- I don't understand why -- I mean

there are a lot of other things that will be going on in those remaining years from a manufacturers' standpoint. So I assume that the manufacturer creates the spare parts because there are model changes and other design changes.

So that the spare parts remain in somebody's inventory until such time as they're called upon by this decreasing number of customers who have a product for which they need a spare part.

So I guess I don't actually see -- I see the conflict -- I see a difference in dates, but I don't necessarily see a conflict between the sets of regulations.

MR. JOHNSON: Well, our members, of course, must comply with both in the end. And their legal departments are giving us this feedback that there does seem to be a conflict between these requirements.

PRESIDING MEMBER PFANNENSTIEL: I understand, thank you.

MR. TUTT: Could you clarify then with the legal departments of your members, that they really do wish to be able to manufacture these spare parts for these products seven years after

their initial introduction to comply with this law, this other law. Rather than just have them in inventory.

Because that's the gist of this here. We're talking about you having spare parts available in inventory that you have manufactured three years after the effective dates of the regulations.

And it seems like you should be able to comply with that, and still satisfy the other law that you bring up.

MR. JOHNSON: Well, again, this is the industry's concern based on that legal feedback. And the other solution would be, of course, to change the parts retention law in California, but this isn't the right forum for that.

PRESIDING MEMBER PFANNENSTIEL: John.

MR. WILSON: This came up in a meeting I had with some other electronics companies, this reference to the California law. And then one of the lawyers from one of the electronics companies said to me, it's actually not black and white at all about what the requirement is in California law.

And actually, your last bullet actually

reflects, I think, some of that grayness. It says up to seven years. So it doesn't say you have to provide parts for seven years.

What do you mean by up to seven years?

MR. JOHNSON: Well, I, of course, didn't author this provision of the California Code. But there's a two-part requirement in the California Code based on the product's value. And, you're right, it does say for up to seven years, but that's language presumably from the legislation which created this provision.

But the requirement is up to and including that seventh year. And so there is an obligation on manufacturers to meet that requirement.

MR. WILSON: Well, I'll ask our staff counsel who's taking copious notes to look into this.

ASSOCIATE MEMBER ROSENFELD: Just to add confusion --

PRESIDING MEMBER PFANNENSTIEL: Art, -- okay, --

ASSOCIATE MEMBER ROSENFELD: -- in the CEA page 8 here, quoting California, it says: For at least seven years." So --

PRESIDING MEMBER PFANNENSTIEL: Oh, so that --

ASSOCIATE MEMBER ROSENFELD: So there's a certain amount of confusion around here.

PRESIDING MEMBER PFANNENSTIEL: The slide should say at least rather than up to? All right, thank you.

All right, we will look into the legal section; clearly we do not want to be in conflict with the California Code.

MR. JOHNSON: Thank you.

PRESIDING MEMBER PFANNENSTIEL: Now I have also on external power supplies that Shawn DuBravac wanted to speak to the question of limited use, but I think we may have covered that? We did, thank you.

Are there other people here who would like to speak on the proposed regulations on external power supplies? I'd like to finish this before we break for lunch, and then we'll come back. Yes, sir.

And I'm sorry, if I have a blue card up here for you, please let me know that. I'm trying to organize them and haven't done a great job.

MR. HAYNES: No, there is no blue card.

There were no questions and I was prepared to answer some questions if they were to come my way. By the way, I'm Jim Haynes with Uniden Corporation.

And I wanted to point out one of the things that was mentioned during the last meeting that we had here. And I made the statement that the power supplies for telephone products do not exist. And I believe it was brought up that -- Mr. Wilson, you brought up the fact that the, I don't have a quote, that I would be getting a quote. Says, I've talked to the company that gave you the unit that met your test and they're going to give you that quote.

Meaning that, I think, it doesn't take a rocket scientist to know if something's tied up in IP or patent legislation that it doesn't exist, it's not readily available. I think that would be an assumption.

On Friday I found out that the company that we were talking about told me that they are withdrawing from producing that or even making a quote because they could not make the price points. And all I wanted to do is make an emphasis that the power supply that's needed for

telephone products does not exist. I just wanted to amplify that.

And also as far as the power supplies that you say do exist, it's my understanding that the company in question knew that TIA was going to be here, and supported TIA coming out. So, whatever the comments that TIA made about those products are still in development, were made with that company's blessing.

Thank you.

PRESIDING MEMBER PFANNENSTIEL: Thank you, sir. Others?

MR. HABBEN: Rick Habben from Wahl Clipper. You should have a blue card.

PRESIDING MEMBER PFANNENSTIEL: Yes, thank you, I do.

MR. HABBEN: I don't think I'm going to belabor through the entire presentation that I was going to have because most of the different points that I have have already been addressed by the different manufacturers.

However, I just do want to highlight a couple of them, and they're more specific to our particular company. And that's regarding the issue of the low voltage availability for these

switching power supplies to meet the CEC requirement.

Due to the fact that I do need a DC output on linear supplies, you have to have a minimum of two diodes with a center tap transformer to accomplish that, there's no way to meet the CEC requirements with a linear supply with the voltage and current ranges that my products are within.

Therefore, that forces, to meet the efficiency requirements, it forces me to go to a switching power supply.

John, I have provided some correspondence from some of my suppliers to you regarding this issue and subject. And John can confirm that as of this date right now I do not have a sample from any supplier that can meet that. They are working on those designs; they are actively trying to come up with something; but I do not have anything at this point in time.

That also brings up the issue, since I don't have anything, since they don't have it designed, I don't have any type of price. And as stated in my letter, you know, part of the codes that the CEC has established is that the

feasibility should be there, and that it should make sense for the California consumer.

At this point in time I don't know either one of those issues because, number one, the design isn't done; and number two, if the design's not done there's no way you can have a cost.

So, in my letter I've given some approximate costs, but they could be higher, they could be lower, from those. Those are just approximates based on the kind of feedback that I'm getting from the manufacturers.

With all that being said, we do appreciate you guys extending the date for the six-month. But with me, at this point in time not having any idea if I'm going to be able to have a design and when I'm going to have one, I'm real fearful of being able to make that date by the end of 2006 here, or January 1, 2007.

I would urge, at this point in time, that if you could grant that additional six months, it would just give that additional design time that's needed to work with these manufacturers to try and get something established that would be able to meet the requirements.

I've done a -- we have a Microsoft project that kind of lays out different times of what stuff takes to get samples in, production of product, approvals that need to be done. And, you know, I should have already had a design and been on my second and third sample stages to meet the January 1st date. So, I'm way behind the eight ball at this point in time.

I just also wanted to re-emphasize that on my products, as stated in my letter, that the hair clippers and trimmers that are running battery operated and cordless, that they are just plugged in once. The normal person plugs them in about once every three weeks. And the reason they do that is that usually the lady of the house doesn't like the things plugged into the outlets, you know, in her bathroom. And so usually they're unplugged, put in the drawer, and out of sight so it doesn't clutter up the bathroom. So that's probably one of the biggest reasons why they continually are taken out and just charged when they run out of energy.

The last thing I wanted to say is that regarding the approval issues, once we get these designs, they have to all go back into

Underwriters Laboratories or ETL to get the appropriate safety approvals. And we're estimating that with the time to do that, and the testing fees, you know, anywhere from 12- to 18-thousand hours per product.

And right now we have approximately 18 products. So anywhere between $200,000 and $300,000 is what it's going to cost us to do that.

I think that's all at this point in time.

PRESIDING MEMBER PFANNENSTIEL: Thank you, Mr. Habben. Questions? John. Thank you.

MR. WILSON: I do want to thank you, Rick, for sharing with me that email stream that you had with your suppliers. It was very informative. And you did quote in your letter what was probably the most interesting email where they said they might have a power supply available by June 2006. Which I took as being very positive. You put the emphasis on may.

And I understand the difference in perspective, but nonetheless we'll be curious to see what is provided.

I think Chris probably wants to talk about this, but there is a test report for a Black

and Decker low voltage power supply that meets the California requirements. You said that you had you voltage and power requirements. This was for 2. volts and a half a watt output. What are your requirements?

MR. HABBEN: My requirements are approximately, again since we don't have the design done, and linears act different from switchers, so we're going to have to play around with the engineering on it. But I'm approximating approximately 1.5 volts is what I need to charge a 1.2 volt nicad, because the charge voltage has to be greater than the battery voltage in order to charge it.

And typically a 1.2 volt nicad battery, when it's fully charged, is about 1.25 volts. So I have to have greater than 1.35 volts to get a full charge on a nicad battery.

That charging the batteries alone isn't the biggest issue. The biggest issue is that many of the products are what we term cord/cordless. Which means when the battery runs dead, you can plug in the power supply and run the product off of the transformer only.

When that is required the voltage would

again have to be approximately 1.5 volts to run -- 1.2 to 1.5 to run the motor at the correct speed. But the current draw is between 1.5 and about 1.8 amps, which is extremely high current draw for such a low voltage.

So whatever that wattage figures out to be, 1.5 times 1.8, whatever that is, would be the wattage.

PRESIDING MEMBER PFANNENSTIEL: Thank you. Chris, do you have a quick question?

MR. CALWELL: Sure. Would Norelco be considered a competitor for your products?

MR. HABBEN: Yes, it would.

MR. CALWELL: Okay. I looked through our database and unfortunately we didn't have any of your products, they just weren't available at retailers in the area. But I did find two Norelco products that have been tested. One of them is a 6-in-1 grooming kit, has a shaver; the other is a three-head shaver with charging base.

And we checked the specifics on them. The first one uses a nicad battery, 1.2 volts; the power supply is 1.6 volts out. And this device only has an average efficiency of 16 percent, which, you know, one would think is so low that it

couldn't qualify. But it's such a low wattage output that at that level it does qualify.

The standard only requires an efficiency of lower than 16 percent. So that particular competitive product from Norelco competes in your space, charges a battery of similar size, and is compliant with the linear power supply at 16 percent efficient with a load/no-load power consumption.

So it may be worth checking to see where they got their power supply from, and talking to the same vendor.

The second product is also interesting; it's a lithium ion product. I suspect the reason for that is that nicad batteries are about to be banned from sale in Europe. And companies that sell internationally need to be compliant with new battery chemistries.

This is a 3.6 volt product. It's power supply is a remarkable 74 percent efficient. And it also complies with both the no-load and the active mode efficiency requirement of the California standard.

So, of the three shavers we've tested so far, two from Norelco, one from Remington, two-

thirds of them passed the standard.

MR. HABBEN: Okay, I'd like to address the issues there, Chris. You're correct in the low wattage requirements, because the formula changes when they're less than 1 watt, there are some linears that will pass that.

But as I have just brought up, that when you go to the one battery cord/cordless devices, you jump above the 1 watt output because of the high current draw in the secondary. So therefore your efficiencies jump way up there, and you no longer can use the other formula that's used below the 1 watt. So, that's how the one Norelco is able to pass, is because it has such a low output.

Your second product, as you said, was a 3.6 volt appliance. This, again, doesn't address the 1.2 volt appliances that we have. And that if it had a lithium ion, I'm assuming that the product price point is probably very high if it was a shaver. And we also have to look at the price points, you know. There are shavers out there that are $70; and there's trimmers out there that are $15.

And it's going to be, I would say, impossible to put a lithium ion battery into a $15

appliance. The lithium ion batteries are, I'd say, two to three times the cost of nickel cadmium type batteries.

MR. CALWELL: So do you think you'll just keep selling the nicads in the U.S. Or are you making a battery chemistry change to comply with European ROHS.

MR. HABBEN: The European ROHS, there's actually a battery directive out there in the European community. So the ROHS directive does not cover batteries. There's a specific battery directive which still allows provision for nicad batteries. We've also been dealing very intently with this issue, as well.

And the other type of battery chemistry that you can use that's much cheaper than lithium ion is nickel metal hydride if you want to get away from the nickel cadmium.

MR. CALWELL: Sure. Yeah, we tested a cordless toothbrush that had nickel metal hydride, as well.

The only other question I guess I had regarding the design is when we looked at competitive products in the market, it seemed like about half of them had an external AC/DC power

supply or AC/AC. The other half just used a conventional AC cord, brought it to the device, and then it appeared that the power conversion or step-down was happening internally. Do you have any devices of that type?

MR. HABBEN: We have one device that we don't make directly, that we purchase, but typically when the AC power comes into the device you have to have all the electronics in the actual product. And most of the time these, again, are a very high end type shavers or high price point trimmers that have the electronics in there.

You know, typically the electronics for a board inside a unit that can take AC, you know, that cost on those type of boards is very expensive. Much more than what, you know, just a AC power adapter would be.

MR. CALWELL: Okay, yeah, we'll furnish any data we can find on this to the Commission's record. But it looked like the competitors at least were both using that strategy routinely, I guess, probably to, you know, eliminate the clutter of the large plug at the wall, and also managing to sell them to consumers at whatever price point they sell. There were, I think, four

lines of Norelco shavers that use that strategy.

PRESIDING MEMBER PFANNENSTIEL: Thank you, Chris.

MR. CALWELL: Thanks.

PRESIDING MEMBER PFANNENSTIEL: Thank you.

MR. HABBEN: Yes.

MS. KELLY: My name is Anne Kelly and I'm here today representing Hewlett Packard. And I guess I'm going to be the lone voice to stand here today and say that the company totally supports your proposed regulations; is very appreciative of the removal of the 230-volt testing requirement; and is appreciative of the fact that some product manufacturers apparently do need an extra six months, so HP can go along with that.

We would like to encourage you to stick with that date. Perhaps it's because HP is a California company, went through the energy crisis, and recognized that there was going to be some discussion of the need for more energy efficiency products. Got ahead of the curve with you; started investing money redesigning their products several years ago to meet the July 1 date

for this year.

It has found suppliers that can meet the standards. As you know they're a global manufacturer of laptops, computers, tvs and printers. And perhaps it's because we here in the west had the energy crisis.

It's our understanding that Oregon, Washington, Arizona and Vermont are going to require basically these same standards to be in place January 1 of 2007.

So we encourage you to stick with that date. Thank you.

PRESIDING MEMBER PFANNENSTIEL: Thank you, Ms. Kelly. And thank you for your supportive letter.

MR. CALWELL: Commissioner, just one question for HP, if I could.

PRESIDING MEMBER PFANNENSTIEL: One second, Chris.

MR. CALWELL: I'm sorry.

PRESIDING MEMBER PFANNENSTIEL: Okay, go ahead.

MR. CALWELL: I just wondered, does HP also manufacture audio products with external power supplies?

MS. KELLY: I believe they do, although I'm not an engineer so I would need to check. I know computers have an audio element to them, so I know that some of their products certainly do.

MR. CALWELL: Okay, yeah, the --

MS. KELLY: I can hook you up with an engineer who's been working particularly with John Wilson that can answer that question.

MR. CALWELL: I think that would be great. The one case I was thinking about is speakers --

MS. KELLY: Yes, --

MR. CALWELL: -- that are sold with computers.

MS. KELLY: -- exactly.

MR. CALWELL: And so if we could find the external power supplies that, you know, you located that are compliant, it might be helpful with other folks who have been attending the hearing today.

MS. KELLY: I can tell you that I know one of the gentlemen up on the dais asked HP about where these suppliers are located, and I think a lot of them are in Asia.

MR. CALWELL: Okay. And, Commissioner

Pfannenstiel, really the only other thing I wanted to say to echo what HP had mentioned is that the first technical workshop sponsored by the CEC on test procedures for external power supplies started in 2002 and continued in '03, '04 and '05.

There were manufacturers attending, like HP, who, you know, took the early signs of the workshop seriously and did their re-designs to be proactive.

There were other manufacturers who were there and focused primarily on trying to delay or weaken the standards. And I think the outcomes speak for themselves.

PRESIDING MEMBER PFANNENSTIEL: Thank you, Chris. Thank you, Ms. Kelly.

I think, Doug, before you there was somebody else who wanted to speak. Yes, please.

MR. CARLUCCI: Good afternoon. My name's Vito Carlucci with Conair Corporation, and I want to thank you for the proposed extending of time. We do need it. Unfortunately, for whatever reason, we only learned about this last year at the housewares show. So we're kind of late to the game.

We're a manufacturer of many types of

different products, some of which compete directly with Wahl clippers and trimmers, beard and mustache trimmers, products of that nature. And we also have another class of products which are what we call our feel-good line, which is massagers, which consists of heating pads, soft cushion massagers.

These products actually work pretty well differently than pretty much everything that's been described so far. They do have heat output. They are higher output transformers which are used to power a low-power heater and motorized massage devices.

These are products that are typically never left plugged in. They're used and they're put away, you know. Heating pad, you use it when you have a problem on your back. You plug it in and you use it. You put it away.

Our soft cushion massagers generally are not left out. Again, you use it for sort of a therapeutic treatment.

What we're finding is that none of our current suppliers knew about this when we approached them last year. So, they're all scrambling to try to meet this requirement at the

point in time.

We're finding that it's doubling our cost in some cases; in some cases it's 30 percent more. It seems like the more power it is, the more expensive it is.

So, to us it's a big impact at the retail. We have a situation where we're taking like a 19.99 product, maybe having to bring it up to 25 or 29; something that was retailing for 49 may have to go up to 79. It's a major impact to the consumer.

And the nature of the product, they're used for very short periods of time, very limited. So, we had sent you a letter on March 20th. We're looking for an exemption for this class of product.

We actually support what you're doing for battery charging devices and things that are generally, you know, used much more on a daily basis, much more continuous use. But we're mainly interested in these soft cushion type products which are, you know, in our minds very very limited use.

We do need more time; definitely six months will help. I don't think there's anybody

here from UL. I mean I talked to people at UL; they don't even know this is going on. So I have a feeling -- from UL?

AUDIENCE SPEAKER: (inaudible).

MR. CARLUCCI: Okay. I have a feeling they're going to get bombarded with a lot of people all of a sudden, a lot of Asian suppliers coming to them saying, look, we now have to reapprove our supplies.

They're typically, you know, not set up to handle large, you know, influx of new items. So I don't know why they're not in the loop. I don't know if you've talked to any of the approval agencies or not. But, you know, from my conversations with them, you know, this was pretty much news to them.

So, I would just want to close and say we would appreciate considering this class of products, which is very limited use. I think we've defined what they are in our letter pretty much, and would appreciate your consideration on that.

Thank you.

ASSOCIATE MEMBER ROSENFELD: I have just a sort of funny question. Did you say that you

actually have heating pads which are battery operated?

MR. CARLUCCI: We have one, it's not battery, there's no batteries. It's used with a 12-volt, 2 amp transformer.

ASSOCIATE MEMBER ROSENFELD: Oh, it's -- okay.

MR. CARLUCCI: Okay? And the reason we do that, it's a very soft product that's low voltage vibration motors in it, in an effort to keep it thin and lightweight, we went the low voltage route. As well as the additional safety of the low voltage.

ASSOCIATE MEMBER ROSENFELD: Oh, sure. I wasn't listening carefully.

MR. CARLUCCI: Yeah, in fact, every product I mentioned, none of which have any batteries in them. They're all powered directly off of a transformer and only used, you know, when the product's being used.

Another factor I want to bring out is, you know, in 1991 UL and Consumer Products Safety Commission mandated ALCI plugs for all hair dryers, which was a great thing. I just want to point out somebody earlier made mention of, you

know, the safety and reliability of devices that are left plugged in for lightning surge and everything.

What we found with the ALCIs is almost every one of them had a problem because in the UL requirement there wasn't really a temperature requirement for the contacts. Six months, a year later, we started getting a lot of returns.

I think we have to be very careful about, you know, looking at the safety. And I think the more time involved the better for everybody to study these issues.

Thank you.

ASSOCIATE MEMBER ROSENFELD: But again to show my confusion, now that I've understood that you're just talking about transformers from 110 to I don't know what --

MR. CARLUCCI: We have 16, 18 different voltages. Primarily 12 volt, 1 amp, 2 amp, 600 milli-amp; some are 3 volt because they're just running, you know, the massager motors. It's a big variety.

Even a few other products like we have one product which is a clipper which isn't a battery, it's just a low voltage operated clipper.

Where, you know, again, nobody would ever leave a haircut kit out. They'll plug it in; they'll use it; they'll put it away. I mean it's not, you know, draining the grid, so to speak.

PRESIDING MEMBER PFANNENSTIEL: Thank you, Mr. Carlucci.

MR. CARLUCCI: You're welcome.

ASSOCIATE MEMBER ROSENFELD: Uniden wants --

PRESIDING MEMBER PFANNENSTIEL: Again.

MR. HAYNES: I'm Jim Haynes with Uniden. I had a quick question I just wanted to get on the record with the lady from Hewlett Packard, if I may.

PRESIDING MEMBER PFANNENSTIEL: Well, let me just say if it's acceptable to her. I generally, for hearings we don't normally engage in back-and-forth with speakers. But perhaps you can ask the question up here and we'll see if there's an answer.

MR. HAYNES: Okay. I just wanted to say for the IT products, and we're all for saving energy, but for IT products that they make that connect to the commercial power and to the telephone line, do you recommend those to be used

with surge protectors?

MS. KELLY: I'd have to put you in touch with someone.

MR. HAYNES: Okay.

PRESIDING MEMBER PFANNENSTIEL: Thank you, Mr. Haynes.

MR. HAYNES: Okay, thank you.

PRESIDING MEMBER PFANNENSTIEL: She said she didn't have the answer. Thank you.

MR. JOHNSON: Thank you, Commissioner. I'd like to present two points to the Commission. One has to do with the state of affairs out in other jurisdictions concerning external power supplies.

A 12-month delay to July 1, 2007 would actually bring California closer to the majority of states where the January 1, 2008 effective date for external power supply regulations.

Right now currently the majority of states to have a January 1, 2008 date attached to their external power supply regulations which reflect California's requirements.

Two states do not. That's Oregon and Rhode Island. Currently they're at January 1, 2007. However, we expect Rhode Island will

harmonize with Massachusetts, and Oregon will likely harmonize with either California or Washington.

But currently the majority of states with external power supply regulations are in the January 1, 2008 category.

The second point is when does industry respond to requirements concerning, for example, external power supplies. It's not in a workshop; it's not in a proposal. It's when it hits the books; it's when it's official; it's when it's law.

And our understanding is that the Commission approved the appliance efficiency regulations in December of 2004. And I believe there's at least one more step before they become official, and that's review by the Office of Administrative Law which occurred in the spring of 2005.

So our industry really is not inclined to respond to proposals or regulations before they're actually official. Thank you.

PRESIDING MEMBER PFANNENSTIEL: Thank you. I would just point out that some members, and I think HP was an example that we heard from,

that did seek the handwriting on the wall when these -- when we first began the discussion of the standards. And have been working with us during that time.

So I think it's not a hundred percent accurate to say that nobody responds until they are absolutely final. I think that there's a sense that we're moving in this direction, and we have been for some time.

MR. JOHNSON: Sure, and to your point, Commissioner, I'd like to also point out that the market for external power supplies was -- well, there was market transformation going on apart from these regulations, of course; reasons such as the price of metals, components and linear power supplies. Or the simple fact that more efficient power supplies tend to be smaller, lighter, more sleeker, and more easily packaged with mobile phones, for example.

So there was a transformation underway already apart from these regulations. Thank you.

PRESIDING MEMBER PFANNENSTIEL: Thank you. Further comments on external power supplies? We are not closing this hearing, we're just trying to break for lunch.

MR. MARKWALTER: Okay.

PRESIDING MEMBER PFANNENSTIEL: Go ahead.

MR. MARKWALTER: And it's on this point, and then I think we might be done with EPSs.

PRESIDING MEMBER PFANNENSTIEL: No, I think there are others.

MR. MARKWALTER: Okay. I'm Brian Markwalter with CEA. I think what is showing up now, and actually I think we're getting much closer together because we've had so much more information exchange and research has taken place.

But within CEA, as we've talked to members, it's pretty clear that there are certain product categories that have not had as much trouble. For the same reason that Dell is not here with us and Apple and others in the computer segment, that industry appears to be in a position that they were already using switchmode power supplies. They are much more able to make that conversion.

What you hear a lot today are the certain product categories or companies, either very large companies with very diverse product portfolios that have specific problems in certain

areas.

So our request is for the full 12 months we originally asked for. And then a look at certain categories. I appreciate Commissioner Rosenfeld's recognition. Our data said exactly what you said, indicated, which is certain types of products like cellphones, -- in fact, we believe they're already there and should not be excluded.

So I think we're very close if we can work on some of the language in the additional 12 months to get some of the products more able to comply.

Thanks.

PRESIDING MEMBER PFANNENSTIEL: Thank you. I saw another hand? Yes, sir.

MR. MORALES: Ernie Morales, Harman Music Group. People kind of jumped in before I decided to come up and talk about this.

It is very important that we take a true look at what is out there in the supply chain. I have had countless people come into my office and say I can give you this external power supply at price X, and I can have it for you here in the supply chain tomorrow.

And this is not once, this is not twice, this is countless times where it does not happen. I think salesmen that are out there are good salesmen. And I think that in a lot of cases they say they can do, but they cannot come up with the actual supplies.

Just in preparing towards this Commission we actually requested a price quote and some samples from a particular company. We received the price quote within about a week. The gentleman came to talk to us a week later. Promised us the samples to be along with the price quote. They did not arrive. He came to us a week later. He did not bring them with him. Still it's been yet a third additional week since then and I've not seen a sample.

I think it is truly truly in industry something that happens where people are promising things that are not deliverable. And we really need to take a look at that. Thank you.

PRESIDING MEMBER PFANNENSTIEL: Thank you, Mr. Morales. I think with that -- yes?

MR. JANSEN: I'm Arian Jansen from Elpac. I would like to make a small remark about the compliance especially of laptop computers and

printers, which obviously for Hewlett Packard is a big part of their product line.

Already for years those external adapters have had working efficiencies in the order of magnitude of 84, 85 percent. And since about '99 they have been having about a 1 volt, no load requirement. So it's for HP not a very difficult task to basically move their figures up a very small amount to meet the CEC requirements.

But I just brought this power supply which is completely on the other side of the spectrum. This is a power supply, an external power supply, it's used for LED signs that is a modern replacement to neon signs.

And this power supply works at an output voltage of 2 to 2.7 volts. And this power supply, for instance, will never be able to meet the CEC requirements.

So what we see here is that on one hand a product line, and I have to agree that that product line for laptop computers and printers constitutes much more of an energy consumption in the markets than neon signs or LED signs. But the laptop computers are only required to increase their efficiency requirements a little bit over

what they were already doing.

But on the other hand, and for LED signs, it's impossible. But there's a whole area of products in between that are much more penalized by this regulation and has to invest more cost, but also have to do a lot more re-design. And re-design costs time.

So, for the LED signs, there is no answer to how they have to do this. For the laptop computers it's a fairly minor change to what they already had. And, again, the products in between, a lot of the consumer electronics products that are running at 9 volts and 12 volts, they need to invest much more time and effort basically to meet the regulations.

PRESIDING MEMBER PFANNENSTIEL: Thank you, sir. John.

MR. WILSON: I'm sorry, before you leave, sir, could you tell us again what the voltage and the power was for that power supply?

MR. JANSEN: This power supply, again, this is on the extreme side of the low voltage. This power supply comes in 2.8 volts, the voltage range; and this is the smallest of the family, but this is 14 watts. It goes up to 56.

And we are making this power supply, but we are one of two suppliers supplying that for this specific LED lighting manufacturer, -- a category of manufacturers outside doing this.

So the power level goes from 14 to 56. And the voltage is between 2 and 2.8. And the voltage depends on the color actually of the LED sign.

MR. WILSON: Thank you.

PRESIDING MEMBER PFANNENSTIEL: Thank you.

MR. DuBRAVAC: Shawn DuBravac for CEA. I'll be quick. I know you'd like to take lunch. I think one of the big points is the fact that the difficulty with becoming compliant is not a company-to-company issue, it's a product-to-product issue.

So companies competing in the laptop space or the printer space are already -- they're not having the difficulty in becoming compliant. It's really among some of these other products, especially when we get down into the low voltage range.

And so, you know, a company that is focused on higher voltage products or focused on

laptops or printers, is not competing against somebody who's producing some of these other products, per se.

So I think the focus should be on the product line. Is it possible to bring that product line up to CEC compliance. And we continue to see a lot of difficulty in doing that in the lower range.

And I think this speaks to Mr. Rosenfeld's comment that I don't think in delaying 12 months we're giving an unfair competitive advantage to companies, or we're taking away a competitive advantage to other companies, because they're not really competing with each other.

And somebody in the market, a consumer in the market for a laptop is not going to decide an MP3 player instead. They want a laptop to fill a certain purpose and they're going to do that.

And we are seeing laptops, mobile phones, printers already moving in that direction. And most of those products, we believe, are already compliant.

Thank you.

PRESIDING MEMBER PFANNENSTIEL: Thank you.

ASSOCIATE MEMBER ROSENFELD: And I'll admit that argument makes a certain amount of sense.

PRESIDING MEMBER PFANNENSTIEL: Further discussion about external power supplies? One --

MR. CALWELL: Commissioner, I have one final point to add --

PRESIDING MEMBER PFANNENSTIEL: Go ahead.

MR. CALWELL: This is Chris Calwell. I did review the EPA website this morning just to see what the current list was. And they've updated their external power supply compliance list and their manufacturer list since your previous hearing on the subject.

So, the current list has 29 manufacturers that are participating in the EnergyStar program with compliant external power supplies. They are manufactured in China, Japan, South Korea, Finland, Taiwan, the United Kingdom, Germany and five U.S. states.

And the list of products of manufacturers spans the range of voltage and current output, and spans the range of product types that are well beyond computers and mobile

phones and printers and so forth.

So I would encourage folks to check that list and be in touch with those vendors. And I expect the number of participants to grow again soon since EPA recently attended the applied power electronics conference and did some more outreach to new manufacturers.

It's a very exciting field; it's moving quickly and lots of products will soon be compliant that aren't up there yet.

Thanks again for the opportunity to weigh in, and that's it for my comments today.

PRESIDING MEMBER PFANNENSTIEL: Thank you, Chris. Anything else on external power supplies?

When we reconvene after lunch we're going to talk about DTAs and then conclude the Committee hearing.

So we will reconvene, I think, at 1:30, back here then. Thank you.

(Whereupon, at 12:25 p.m., the hearing was adjourned, to reconvene at 1:30 p.m., this same day.)

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AFTERNOON SESSION

1:42 p.m.

PRESIDING MEMBER PFANNENSTIEL: I apologize, Mr. Shrivastava. Maybe you can start again?

DR. SHRIVASTAVA: Yes. So I'm basically representing Zoran Corporation here today. And ever since last year we've been invited several times to Capitol Hill in demonstrating our technologies and how we can enable digital transmission for broadcasting in North America.

And so basically this afternoon I'd like to share several of our studies and their results and how they specifically fit into power consumptions and technologies of DTV converter boxes.

So a quick word about Zoran for -- most of you are not familiar with us. We are a Silicon Valley-based company founded in 1983 by ex-Stanford graduates, Stanford alumni. And we're headquartered in Sunnyvale, but we have our offices globally in 11 different countries.

Our major business is in manufacture of semiconductor devices that basically go into several consumer electronic segments, namely DVD

players or digital tvs, cameras, printers, and also mobile phones.

So with respect to our DVD products specifically, we are almost in our fifth generation of products that are being used for worldwide digital television solutions.

These include both in-chassis products that go inside tvs, as well as products that go inside set-top boxes. And this again addresses both high definition requirements as well as standard definition requirements.

So we have boxes not only catering to North America, but we also have solutions that get deployed in Australia, in Japan. And also the standard definition boxes that get deployed in the European Union.

So specifically with respect to DTV converter boxes, you know, apart from just making silicon products, one of the strategies of our company is to basically make reference designs which we deliver to our customers. We basically license them and we call them copyready designs.

So this example in the photograph here is actually a reference platform that is available today. It's being licensed to several of our

customers in Asia to basically manufacture DRV converter boxes in high volume, given the transition data and the converter boxes that will be in demand starting 2008, heading towards the analog shutdown.

So the key components here that I'd just like to highlight because we'll touch upon them as we go through the presentation.

The first component here is a RF tuner. This is the component that actually receives the broadcast signal. After that we have a demodulator, which demodulates the ATSC signal and provides the digital data.

Then we have a processor and a digital video decoder which actually decodes the pictures. And to help it store all intermediate frames and pictures there's also a memory. And, of course, there's a lot of assorted analog components on this board which also consume power.

So based on the studies and all our discussions with several component suppliers this is what we believe current state-of-the-art converter box would consume. And these are, again, estimates. By the time we go into production there will be some variation.

So, several of our suppliers for RF tuners have quoted us being between .9 and 1.5 watts for the RF tuner. Between .75 and 1.2 for the demodulator. The processor and -- decoders go about 3.5 watts.

The memories are about 1.5 watts. And the assorted analog on the board about .5 watt. And with a power supply to go inside the box, which consumes somewhere between 5 to 6 watts puts us somewhere around 14 watts for a high definition converter box.

Now, one of the unique things about our solution is it is truly a converter box. The -- decoder is receiving high definition programming and outputting only standard definition programming. So our solution today does not output high definition programming.

So if we just look at surveys, I just went and referenced several of these components. The first two over here being silicon tuners. As you can see, silicon tuners also consume 1.2 to 1.58 watts, as opposed to can tuners which also range somewhere between .9 and 1.2 watts. So between can tuners and silicon tuners they are pretty much at the same ballpark in terms of power

consumption.

Demodulators are currently at 1 watt. Several references have been made in some past material on older demodulators, which used to consume lower wattage. But as we are finding, as the firmware in these demodulators have improved over time to improve their performance of ATSC reception, power consumption has actually gone up over time.

This is a standard DRAM memory which is used by the processor at 1.5 watts. Now, just for comparison I also added a demodulator which is used for the European systems, which uses a technology called COFDM. And there you can see the power consumption is .56 watts, which is significantly lower than the 1 watt number for demodulators that are used for AVSB decoding in the North American scenario.

So as I was mentioning about silicon tuners, we have worked with silicon tuners in the past. This is a reference board that we also demonstrated last year on Capitol Hill. As you can see it helps us to reduce the form factor of the solution significantly so that we can go into plasma screens and so on. But in terms of power

consumption, this little chip consumes the same amount of power as this tuner can here. And we haven't really seen any power saving by moving to silicon tuners. So it really depends upon the application where the customers decide whether they want to go with the traditional tuner can implementation or a silicon tuner.

Another key difference between U.S. set-top boxes and European set-top boxes is the fact that the European broadcast system defines up to 18 different digital streams of varying resolutions. But each converter box has to be capable of decoding the highest bit rate possible, which is a picture which is 1920 by 1080 i, which is much larger than most computer screens in average homes today. And that data rate is almost 19.2 Megabits per second, which is approximately six times the data rate that is required for a standard definition, terrestrial broadcast in the European Union.

So by sheer picture size, it is six times the amount of data that the processor needs to process.

The other issue is once the picture has been decoded, this picture is a fairly large

picture which now has to be scaled down so that it can be formatted to fit the screen of an analog tv, which is defined at 720 by 480 i. So apart from this decoding the picture, we also need a circuit that needs to scale the picture down from its high definition size to its standard definition size.

This is, again, something that is specifically required by chips that will be used in the converter box market. So it's two operations.

And, again, the size here, we're talking about because of the high definition picture size we're talking about working on a picture that comes in at a rate of 200 Megabits per second. We'd be reading digital data and converting that to a standard definition.

So, not only do we need a larger data set, we also need a really high speed memory. We have seen a tendency in high definition set-top box to migrate towards the faster memories which are being used in the pc industry.

So here's a survey of several high definition set-top boxes that are available around the world, in Australia, Japan and one of them

also being -- two of them, actually, here being U.S. set-top boxes. And you can see on the average they're all consuming somewhere between 15 to 20 watts in active operation mode. And somewhere about 4 watts in standby mode.

So, essentially, you know, Zoran is committed to developing products that drive low power and all consume electronics. I mean some of our other products also being the mobile platform and portable media players and digital cameras and so on. And as we push to smaller micron technologies that implement these technologies, we are consuming low power.

But at this point we still feel that the 8 watt regulation is very challenging for the current state-of-the-art DTV converter chip sets.

Also, basically the target for analog shutdown being February 17, 2009, we're expecting several manufacturers to go into production in 2007 to basically have boxes in the channel in 2008. And so we basically feel by delaying the ruling on DTA converter boxes it is going to be very challenging for these boxes to be here in the U.S. as several regions start switching off analog in early 2008.

And basically Zoran would recommend that the CEC, you know, basically should unify with other energy bodies like EnergyStar and also some of the work being done by the CEA to have a unified single national standard for power consumption. And this will basically help several manufacturers, traditional manufacturers of set-top boxes in southeast Asia to basically have boxes in time for the transition.

PRESIDING MEMBER PFANNENSTIEL: May I just, one point of clarification. Did you just say that delaying the standards for DTAs would be a problem because the 1/1/08 standard date is when they would actually go to market?

DR. SHRIVASTAVA: We will already be in the market.

PRESIDING MEMBER PFANNENSTIEL: So you'd rather have the effective date of the standard 1/1/07 so that people are able to make those adjustments?

DR. SHRIVASTAVA: Actually, to represent exactly how the manufacturers would work, they would prefer a single national standard. That would be the best way for them to basically work towards having an energy efficient design.

Now, it's basically what should the right number be in the standard, and that's where we are basically recommending that the CEC come together with other bodies like the NTIA which is also spec'ing out the current box. And hopefully converge on a standard as soon as possible.

But delaying the standard to 2008 would be an issue.

PRESIDING MEMBER PFANNENSTIEL: Other questions?

MR. WILSON: Well, this is a very interesting presentation. I wish I understood more of it. And I would also wish our consultant, Paul Rudnick, who presented at the January 30th workshop, was here to engage with you. Because I think it would be an interesting dialogue to listen to.

Have you, by chance, talked to him?

DR. SHRIVASTAVA: No, I haven't.

MR. WILSON: We should arrange that. One of the things Paul pointed out, not as a proof that, say a 2 watt DTA could be created, but as an indication that much lower power levels could be achieved, or was looking at some of the USB-based tv tuners for laptop computers. Could you comment

on that?

DR. SHRIVASTAVA: Well, in terms of a USB (indiscernible) the only silicon that would be present in there would be a tuner and a demodulator. And if you see some of the estimates that we have, you may be able to get there in a sub-3-watt situation. But the key thing that you're missing is the actual decoding of the screen.

So having a converter box for an analog tv requires the processing of the images. And with that you would require a processor, you would require its memory subsystem, you would require additional analog components and so on.

So there's a significant amount of power that these processors take. So if you just look at pc-based design, especially USB1s, they're not decoding a picture. They're just passing on a digital stream to the pc. And the pc has something almost running at 1 to 2 gigahertz with a 400 watt power supply inside, which is actually decoding the HD images and putting them up on a computer monitor.

It's a completely different scenario for what we will see in converter boxes, specifically

the ones that are being mandated by the NTIA and the DTV bill.

MR. WILSON: One of the DTAs we were looking at was one built by Pace for the European broadcast. I think it was less than 7 watts on, and less than 1 watt in standby. Could you comment on that?

DR. SHRIVASTAVA: Right, and I think we can explain that based on one of the slides I had up there. Basically it was the difference between processing a high definition picture and a standard definition picture.

(Pause.)

DR. SHRIVASTAVA: So right here -- so in the EU the television screen image is of the size 720 by 576. And in the North American standard the most complex image we would be decoding would be 1920 by 1080. And that is basically when the data comes into the system it is at a rate of 19.2 Megabits per second. While the data in Europe would be at 3 Megabits per second.

So that is almost six times the data rate complexity. And just because of the size of the image being larger, too, it basically requires more processing cycles. So the base box is a

standard definition box, and you could probably do a standard definition box in that -- guidance, but probably not at a high definition set-top box.

MR. WILSON: One more question, which may be unfair, but I have to ask it anyway. I'm just curious, since we are talking with EnergyStar and obviously you are, as well, do you have any idea what levels you would recommend to EnergyStar?

DR. SHRIVASTAVA: Well, we can probably work on providing you some data that would give you some guidance. Because, you know, it really depends upon how the end customers purchase their components; that affects the final power performance of a set-top box.

But I don't know exactly which level.

MR. WILSON: That leads me to another question. Have you thought about the Australian levels of 14 on, 2 standby?

DR. SHRIVASTAVA: Um-hum. Okay, so -- right, so they are mandating 14 and 2 in Australia. So in North America I think it will be something very much in that ballpark.

MR. WILSON: Um-hum.

DR. SHRIVASTAVA: Yeah.

MR. WILSON: And you showed numbers you said added up to about 14 watts for on.

DR. SHRIVASTAVA: That's right.

MR. WILSON: I don't recall if you showed numbers for standby?

DR. SHRIVASTAVA: Right. Standby, okay, then that depends on several features which, you know, will customers implement or not implement in boxes. So standby numbers depend on several issues.

For example, in a digital broadcast stream you would always be having data that is used to build a programming guide. And that data is continuously broadcast.

Now, when a consumer powers on the box, would you still want updated data, or would you want the box to wait for some amount of time to let input that table together.

And all of those issues will differ on different platforms. So, based on what end products need to meet in terms of features, it will severely impact the standby power.

Same thing, do you want the box to remember what channel it was on before it was powered off. Or does it always come on and take

you to channel 3 or channel 4. And things like that would require some part of the box to be on, monitor the incoming stream, or stay awake to monitor the commands from a remote, and so on.

And so, you know, there can be quite a variance in what the standby power needs to be.

MR. WILSON: Well, thank you very much.

DR. SHRIVASTAVA: Yeah.

PRESIDING MEMBER PFANNENSTIEL: Any other questions? Thank you.

DR. SHRIVASTAVA: Thank you.

PRESIDING MEMBER PFANNENSTIEL: We also have John Taylor of LG Electronics.

MR. TAYLOR: Thank you, Madam Chairwoman, Mr. Commissioner. I really appreciate the opportunity to be here today. I'm sort of wearing two hats, white hats, I hope. I, in addition to being a Vice President for LG Electronics, a leading digital television manufacturer, I also serve as Chairman of the DTV Committee at CEA.

Since the January workshop there's been a lot of progress and I wanted to give you a brief progress report and then get into some more details about the digital television adapter

situation today.

As you know, there are currently no devices on the market that meet California's DTA definition. My company is developing them; other companies are developing them; but there is no firm product definition at this moment.

Last November the 1 watt/8 watt limits were deemed infeasible. They were discussed at the Seoul meeting that was attended by CEC. And at that point it was identified that the high definition portion was infeasible.

And since our workshop in March CEA has made great progress in completing the first version of a standby energy consumption standard, the so-called CEA 2013 standard, which is specifically for cable and satellite boxes. And now a process has begun for defining those energy levels for the digital television adapters.

Just a quick look at the marketplace situation for digital television adapters, or what we call digital tv converters. This is a small but very necessary component of the transition to digital television.

Since the January workshop President Bush signed into law a requirement that all analog

tv broadcasts will cease on February 17, 2009. The new law establishes a subsidy program, $40 per box, two boxes per family per household, to allow consumers who need a set-top box or a digital converter to continue to receive free over-the-air television programming on their existing analog sets.

Part of the U.S. Congress department, NTIA, the National Telecommunications and Information Administration, was tapped by the federal government as part of this new law, and is required to manage this overall transition and the subsidy program which is up to $1 billion of our tax dollars to support this subsidy program.

Now, NTIA has not yet published their notice of proposed rulemaking. They're in the process of defining what this box is going to do and what it won't do. There's some basics written into the law, but they are really the ones that are going to define which D-to-a converters will fall within the subsidy programs, which will fall out of the subsidy programs, and how that overall program will be administered.

Before I move on I just wanted to add one other thing that occurred to me while I was

sitting here. I've been involved in digital television since before it was digital, and ten years ago when the FCC adopted the ATSC standard, we talked a lot about energy in those days. We haven't talked about it recently, but we talked about it in the context of broadcasters.

And I would just urge you to keep in mind what this digital transition is going to mean here in California. Just a back-of-the-envelope figuring while I was sitting here, if you think of about 100 full-powered television stations in California with 100 kilowatts each for their transmitters, you're talking about 240,000 kilowatt hours a day.

That adds up into massive savings when the analog signal can go away. And our concern here, frankly, is anything that could slow down the transition and potentially one state, a giant state like California, could be enough to slow down the entire transition for the entire country, and push that date out from February of 2009.

ASSOCIATE MEMBER ROSENFELD: Would you just repeat those two numbers again? This was for California? The 240 -- just say that again.

MR. TAYLOR: Sure. Let me just look at

my notes here to make sure, unlike my technical experts here I'm high verbal, low math.

Take 100 stations times 100 kilowatts to run a transmitter, times 24 hours a day, which is what they run, there's your 240,000 kilowatt hours per day.

So, say it got extended for three months, almost say 100 days, you know, you're talking 24 million kilowatt hours. This is real money.

ASSOCIATE MEMBER ROSENFELD: That's California?

MR. TAYLOR: That would be just in California. And I think those estimates are conservative.

MR. WILSON: John, I can't help pursuing this a little further. So when you switch from analog to digital the 100 kilowatts drops a lot?

MR. TAYLOR: Right now broadcasters are simulcasting. They're sending both a digital signal and an analog signal. And the digital signal is inherently lower power, about one-tenth of the power of a full-power analog signal.

One of the, you know, the genie-in-the-bottle about digital is that you can reach the

same number of more viewers with a very low-power, robust signal.

Thought it might be useful just to spend a second comparing the definitions, and this is, I think, instructive. You're very familiar with the CEC definition; it's very clear. A sole purpose device for the conversion of digital terrestrial broadcasting, analog.

The federal law similar; talks about stand-alone devices that, a little more specific, talk about converting any channel broadcasting the digital television service. That my friend, Dr. Shrivastava mentioned earlier, you're talking about the 18 formats in the ATSC's standard. Even the highest definition, the highest resolution HDTV programming would be received by this low-cost D-to-A converter and be translated into analog.

Now, what this doesn't say but is certainly implied is what do these boxes -- what they will not do. These are not digital video recorders; they're not combination boxes with DVD players; they're not HDTV boxes per se, they receive those HD signals as I mentioned, but they will not have the outputs to drive a big $1000

high definition display.

But what they will provide is a quality digital picture, a studio quality picture, if you will; and more choice with the advent of multicasting.

From a company's perspective, my company, LG Electronics, has been working very closely with the U.S. broadcasters. All the major broadcast groups based right here in California are well represented in the two major organizations, the Association of Maximum Service Television and the National Association of Broadcasters.

Those two organizations have co-funded a development -- two development programs, one with my company, LG, and another with a company named Thompson, to develop prototype D-to-A converters. These are expected to establish the benchmark performance for the entire industry. A reference design, if you will.

And Zoran is talking about their fifth generation. We've had our fifth generation in the field now for a year. The box prototypes that we're developing right now are on our sixth generation. By the time this is a real product in

the 2008/2009 timeframe it'll be in that seventh generation of silicon, which means lower cost, higher performance.

Those development efforts are well underway right now. And I have to add that like HP, my company's been looking ahead. We are committed to energy efficiency. We are committed, if you look across the board at all the products my company makes, from cellphones to major appliances, to plasma screens that are EnergyStar compliant, it's a major focus. And we've been focused a lot on the D-to-A area, as well.

And it's not impossible to meet these standards, but we need to recognize that energy savings can also increase costs and reduce the features. And this is a delicate balance between having a functional product and energy savings.

And I have to tell you we have more than 100 engineers that have been working on this for six months. And we still don't understand all the tradeoffs.

So, our belief is, with all due respect, the rules are a bit premature. That we really need to strike a balance between low energy usage and the necessary features and performance.

And this is the process that the NTIA is going through right now, trying to define what these boxes are all about. And our biggest concern is California regulations do not fully reflect some of the design constraints that we're grappling with right now.

There's certain things these boxes will have to do by law. They'll have to have closed captioning, digital closed captioning, which is different than the old analog. They will have to have the V chip; it's going to take on new importance this year with all the debates about indecency on the air.

These boxes will have onscreen displays; simple onscreen displays, but they'll be required. You'll have to have an onscreen display to set up your V chip. You'll have to have an onscreen display in many cases just for simple channel ID.

Front panel information, just this little LED can almost be a half a watt. I mean there's certain things that you'll have to have potentially on the front of the box.

Earlier Mr. Shrivastava mentioned this transmission of data that comes along with the DTV standard. That's what's called PSIP, program and

system information protocol. This is for things like electronic program guides and channel information that allow you to navigate and choose the channel.

And I'm not talking about a fancy program guide here that you would see on your digital cable box or your satellite box. This is a very rudimentary system but one that is, we think, not an option but a requirement for consumers to have, you know, a decent digital television experience.

You mentioned the last channel viewed. I mean you think of putting this new box on a 10- or 15-year-old television set, you ought to at least have the same level of functionality you've had for the last 10 or 15 years, which is if you're watching channel 7 and you turn off your tv, you expect it to come back on -- when you turn it back on you expect it to be on channel 7 again.

One of the things we're grappling with here if we have to go down to -- the standby goes too low then we may not be able -- it may have to revert to channel 3.

And finally, the performance of these boxes is really important. And I'm not an

engineer. Our engineers are telling us there are tradeoffs here, as well, in terms of the energy efficiency. But it's really important to make this transition a success. You have to have good indoor reception.

You know, you think of these sets that we're retrofitting here, it's that little 13-inch set in the kitchen sometimes with tinfoil on the rabbit ears to get a good signal. The beauty of digital and this robust system is you'll get an excellent, a gorgeous digital picture on that little set, but we have to be able to optimize the technology to do so.

So, finally, our humble request is that the CEC would please note the importance of digital television adapters to the overall transition to digital television. It's not something we chose; this is the federal mandate. It's the U.S. law.

Very important to California tv viewers, as well, who can't afford to be disenfranchised when the transition happens in 2009.

In light of the major product design issues I discussed and what we believe are premature regulations, we would respectfully

request that the CEC remove the requirement for DTAs.

And finally, we hope you'll join us, the CEC will join CEA and other organizations in driving for energy efficient DTAs. We're continuing our work, our standards work on an open basis. We're looking forward to working with the CEC and many others on voluntary programs and industry standards that will assure the most cost effective approach, and balance that with the needs of the marketplace to help drive the digital television transition.

Thank you.

PRESIDING MEMBER PFANNENSTIEL: Thank you, Mr. Taylor. I have a couple questions. One, if you can answer this, I'm not sure you can, but do you have a sense of how much this DTA box would cost the consumer?

MR. TAYLOR: That's a very good question. The subsidy is at $40.

PRESIDING MEMBER PFANNENSTIEL: Right.

MR. TAYLOR: Congress was shooting for $50 to $60. Our goal at my company, LG Electronics, has made a commitment when we testified before the Congress one year ago last

week, that we could reach a $50 price point in 2008.

Now, that's based on a couple of factors. We didn't factor in what it might cost in terms of the energy efficiency. And frankly, we weren't sure what all the features were going to be yet, so it could be $60. It could also be under $50 depending on how featured it is.

But the other major driver of the cost is the volume. And when you look at the overall market throughout the United States, you're talking probably 50 million-plus units over a pretty short period of time. This is a product that has a short shelf life. It'll be on the market, we believe, from about mid-2008 to mid-2009.

PRESIDING MEMBER PFANNENSTIEL: That's a billion dollars of taxpayer money supporting it.

MR. TAYLOR: Yes, ma'am.

PRESIDING MEMBER PFANNENSTIEL: So, looking at a $50 price point, I'm just trying to get a sense of where you think the additional kinds of efficiency of our standard would drive that price point. I just don't have a sense of are we talking $60 to $70; are we talking $100? I

mean I don't have a sense of where you think that's going to drive the price of the product.

MR. TAYLOR: We don't have a good feel for it yet, either. And I don't think it's really a question of cost so much as the uncertainty that this causes at this point. Since we have not yet even defined the box.

We, as an industry, working with the broadcasters, have put a framework together. It's not at this energy efficiency level yet. I can tell you my company is driving toward that, and will continue to drive toward the most efficient product that we can build.

But I unfortunately do not have any dollars, and probably wouldn't for a number, maybe this time next year I'd have a better feel for it, frankly.

PRESIDING MEMBER PFANNENSTIEL: That really raises my second question which is one of timing. Looking at your recommendation, which is that the Energy Commission pull back the standard and wait until the work that's ongoing in the industry groups is finished, would that then practically require that there be no standard, no energy efficiency standard from the California

Energy Commission for DTAs?

MR. TAYLOR: We believe that's the right approach.

PRESIDING MEMBER PFANNENSTIEL: Because there is no time that would have your work finished in time for us to adopt standards and have them in effect?

MR. TAYLOR: That's --

PRESIDING MEMBER PFANNENSTIEL: Because you'll be working on this right up until --

MR. TAYLOR: Right up until --

PRESIDING MEMBER PFANNENSTIEL: -- the time these things go to market?

MR. TAYLOR: Exactly.

PRESIDING MEMBER PFANNENSTIEL: That's what you're telling us. Thank you.

MR. TAYLOR: Thank you.

PRESIDING MEMBER PFANNENSTIEL: Other questions?

MR. WILSON: Your last slide that just disappeared showed, referred to standards. Is this CEA-2013, is that the -- what is that?

MR. TAYLOR: It's the thing I mentioned earlier which is the -- their first step was to establish the minimum standby standards for cable

and satellite. And now we're well on our way and beginning the process on the DTAs.

MR. WILSON: And what is the standby requirement you adopted?

MR. TAYLOR: I'll have to defer to my friend, Brian.

MR. MARKWALTER: I'll give you a copy of the standard.

PRESIDING MEMBER PFANNENSTIEL: Brian, you really need to speak at a mike.

MR. MARKWALTER: I'll provide you with a draft of the standard. I actually don't have the numbers off the top of my head, but it's based on the category of the product and its features for cable and satellite.

They are considerably higher than what they'll be for terrestrial, as you know, since they are processing conditional access information. I just don't remember the numbers off the top of my head.

MR. WILSON: And what is --

MR. MARKWALTER: I'll be glad to provide you a copy of the draft standards.

MR. WILSON: And why is it standby and not active?

MR. MARKWALTER: Because the industry felt like we needed to deal with standby first. At the time active was not the issue that was most important. And so when we set a scope for the group that created this standard, we set at a standby power. That seemed to be the biggest issue. It was what EnergyStar was grappling with at the time. It was what was coming up in different countries.

So, at the time, DTAs weren't the biggest issue which is why we attacked cable and satellite first. It seemed to be the pressing issue was standby power of cable and satellite first.

And so now we just approved that version of the standard and asked the group to go immediately and deal with DTAs and standby power.

MR. WILSON: I guess that seems a little odd to me since, you know, one of the problems with these boxes that we haven't really talked about is that probably rarely go into standby. Unless there's something in the standard that has some protocol for, you know, putting them into the standby mode after something happens.

MR. MARKWALTER: Correct. And so we

work by what the industry is telling us to do. In fact, it's industry contributions. And at the time the issues were all about standby power, which for cable and satellite, you're right, is usually not that different from active.

And that may be why they suggested to deal with standby first. It's a complicated discussion, actually. I think Lawrence Berkeley National Lab has been part of our working group, as has NRDC has participated.

MR. WILSON: Good.

MR. MARKWALTER: Okay.

PRESIDING MEMBER PFANNENSTIEL: Tim.

MR. TUTT: I had a question, too, for Mr. Taylor.

MR. TAYLOR: Yes, sir.

MR. TUTT: I was wondering your company's opinion of and preparation for the Australian standard for DTAs.

MR. TAYLOR: I'm not that familiar with what we're doing in Australia. We do participate in the Australian market. And if it's 14 and 2 as the regulation, I'm sure we're meeting it.

It's a different animal there, by the way. It's the COFDM modulation we talked about

earlier. Different than the COFDM approach they've used in Europe where we have a lot more economies of scale in what we build for Europe. Different megahertz width in Australia. I think it's 9 or -- 9 megahertz there. So it's not exactly apples to oranges. I mean it is apples to oranges, so not kiwi to kiwi, if you will.

MR. HAYNES: Sir, I would like to ask, do you know how many televisions in California may be needing these digital television adapters come 2009?

MR. TAYLOR: The question was do I know how many analog television sets in California may be needing these digital devices. I don't think anyone has any great numbers; and there hasn't even been widespread agreement on the overall U.S. industry numbers.

We, at LG Electronics, use the federal numbers that came out of the GAO, Government Accountability Office, which point to about 23 million households in the entire country that depend solely on over-the-air broadcasting.

If you use the standard 11 percent for our nation's most populous state, it comes in, I think, about 2.5 million households in California.

You could do the same math for the 70-or-so, 72-million analog television sets throughout the country that depend solely on over-the-air broadcasting -- or I should say that don't use satellite or cable, and that's that third set in your second bedroom, your third bedroom that still has rabbit ears on it.

You know, CEA data shows, however, that many of those sets aren't used at all with broadcast, even though they don't have satellite or cable, they're used with a DVD, the Disney DVD for the kids, or it's used for video games. Or very occasionally it's the set that goes out into the workshop in the garage to watch that baseball game.

MR. HAYNES: If I could also ask, I just want to confirm, you indicated that these units would require a V chip. I guess I was under the impression that televisions require them. Would the DTAs also require a V chip?

MR. TAYLOR: They will. The V chip in your current analog television set will no longer work when the analog broadcast signal goes away.

MR. HAYNES: I see. Thanks.

MR. WILSON: I'm sorry, one quick

question. I think during your presentation you said you expected the DTA market for the U.S. to be 50 million?

MR. TAYLOR: Yeah, that's where I get into the range. I'd say 50- to 70-million is the expected size of the market for the DTAs.

MR. WILSON: So California would be 5- to 7- roughly -million?

MR. TAYLOR: I would say.

MR. WILSON: Okay, thank you.

MR. MARKWALTER: Could I speak to that quickly?

PRESIDING MEMBER PFANNENSTIEL: Sure.

MR. MARKWALTER: As John pointed out, CEA has studied this issue separately. This is Brian Markwalter, again, sorry. And we've given some numbers to the government that were used as federal legislation was being debated. We'll be glad to give you those numbers. They're not exactly aligned. Ours are slightly more conservative.

Our research says quite a few of these tvs, or a pretty high percentage, are not used for off-air at all. That's where a lot of the fuzziness in the numbers comes from. But we'll be

glad to give you our latest research on --

PRESIDING MEMBER PFANNENSTIEL: Brian, it would be really helpful if we could get those numbers quickly.

MR. MARKWALTER: Sure.

PRESIDING MEMBER PFANNENSTIEL: Thank you. Thank you, Mr. Taylor.

Do we have anybody else who wants to speak specifically to the question of DTAs?

Now, I have one blue card from somebody who has not yet spoken. Jean Baronas from Sony.

MS. BARONAS: Thank you, Ms. Pfannenstiel. I want to talk a little bit about voluntary standards today. And the two people before me have talked about the set-top box standard.

And you may wonder how did the Committee do its work, and they did focus on power usage. They took power usage and how it is impacted by different features and component in a set-top box and came up with a form of a sliding scale, and wrote a standard along those lines.

Currently there's another standard in the works. And I have some good news to report since we last met, which is about measuring the

power consumption of tvs.

In the CEA we're writing a standard that will allow all the countries who participate in the International ElectroTechnical Commission, which is the IEC, in developing a tv signal measurement standard.

The concept is to develop a ruler that is uniform and respected worldwide to evaluate and compare the power usage of tv signals. And we really do encourage CEC to join our group. The U.S. Environmental Protection Agency is a voting member of the Committee and they're participating heavily with the work.

We anticipate a draft standard this December. And we hope that you join us before then, or if you can provide comments, you can do that through myself. I actually chair the Committee in the United States that's developing this international standards.

Now I'd like to turn your attention to the final topic I'm going to talk about, which is something that we wanted to offer you as an idea and a suggestion in going forward. And that would be the establishment of a new technical joint ad hoc group.

The CEA is interested in starting a technical ad hoc group with the CEC. And we envision that it would be formed by CEA members and CEC members. We want this group to be a way to exchange information about Title 20. And we look at it because we think we need a two-way conduit between both organizations about interpreting and implementing the standards in Title 20.

We think there's a practical need for ongoing communication in a consistent manner. What we find we are involved with now is constantly sending you emails about what does this provision mean, and how do we apply this.

And we're thinking that it's time consuming for all of us involved; and it might be more efficient if we could have like a formal structure in place that would maybe design a question-and-answer sheet together. And we don't anticipate a lot of in-person meetings would be required, and this could be done by email or faxing and phone calling. This is like a practical way of continuing our work together.

That concludes my presentation.

PRESIDING MEMBER PFANNENSTIEL: Thank

you very much. Interesting comments.

That completes the blue card comments that I have. Anybody else here want to make comments?

Doug, you have concluding comments that you'd like to make on behalf of the CEA?

MR. JOHNSON: -- Mark --

PRESIDING MEMBER PFANNENSTIEL: Yes, certainly.

MR. SHARP: Well, I wasn't anticipating our concluding remarks quite so early, but I'm glad that things have progressed nicely today, I believe.

I'd like to say on behalf of industry I'm speaking of at the moment, not my individual company, Panasonic. We, as an industry, have learned a considerable amount about energy consumption of our products since you have chosen, as a body, to regulate further energy efficiency.

And I think in many cases we've determined, based on our analysis, that there is ample room for design improvements for our products. The real question before us today, I think, is how do we effectively get there. What makes sense for the State of California, its

consumers; and from our perspective, for manufacturers.

And I think it's very incumbent upon us to provide the CEC with the data necessary for you to make informed decisions. And so that you have to work from the same information that we have, as designers and engineers.

And I think the process that we're proposing for you today is to set up this technical group, to go forward. And I'm hoping that that, coupled with the information we provided today and in the past workshop, and essentially the past six months or so, that you have a better understanding of the issues that we're grappling with in trying to meet the regulations.

And more importantly, the challenges that have to be overcome in order for us to effectively get to where we all want to be, and that is to have energy efficient products in households in California.

And I'm hopeful that the information that we provided to you so far, and especially today, has been persuasive and that you will give it your full consideration. And that when you get

to the final point where you make your decisions on going forward, that we're working together with you. And that the end result, again, is beneficial to all parties.

And I'll leave it at that. Thank you.

PRESIDING MEMBER PFANNENSTIEL: Thank you, Mr. Sharp. On behalf of Commissioner Rosenfeld and myself I can assure you we will give this information due consideration.

I want to say that I really appreciate the real effort that the industry has made in helping us sort through these issues. I think that you understand what our goals are, and I think, for the most part, share them. Which is to have the most energy efficient appliances and electronics available to California customers.

We all want to get there. We perhaps have different perspectives in terms of what we mean by feasibility, and what we mean by economics, and what we mean by the different timing constraints that we face.

But where we are now is that the Efficiency Committee, which is Commissioner Rosenfeld and myself, will consider the information that we have received and the comments

that have been filed, as well as the information provided today.

And in that regard, by the way, if anybody can provide the slides to make sure that we have those available to us as we make our deliberations.

This item will be on the Commission business meeting agenda for the April 12th business meeting. So there's not a long time of uncertainty between now and then. And at that point the full Commission will adopt the standards that will be in front of them. And that will be, I think, largely based on our recommendation to them.

So, between now and then, Commissioner Rosenfeld and I, with help from our advisors and the staff, will be making those recommendations and putting them down. They will then become public; then they will go to the full Commission.

With that, are there further comments or any questions?

Hearing none, we will be adjourned. Thank you, all.

(Whereupon, at 2:36 p.m., the hearing was adjourned.)

CERTIFICATE OF REPORTER

I, PETER PETTY, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission Hearing; that it was thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said hearing, nor in any way interested in outcome of said hearing.

IN WITNESS WHEREOF, I have hereunto set my hand this 3rd day of April, 2006.